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Address.

THE MIDWIFE PROBLEM.*

BY A. K. PAINE, M.D., F.A.C.S., BOSTON.

To a certain extent the title of this paper is a misnomer inasmuch as the midwife represents but a part of the general obstetric situation with which we have to deal. An attempt to confine oneself to a single aspect of this great problem is not to deal broadly with the subject presented, but the midwife, representing as she does one of the weaker links in the chain which supports this important part of our social fabric, becomes the object of our most marked attention.

In this community the general trend of thought is to ignore the possibility of benefit to be secured from the continuation of that ancient institution, the midwife. This attitude is generally carried to the point that the average man in his medical upbringing is imbued with the idea that the midwife merits none and has no defence. At least this was my personal experience and it was only gradually borne to me by the wealth of literature on the subject continually appearing in our journals, that our method of easy disposal of the midwife problem, was not apparent to the country at large. It was evident from the number and conflicting nature of the articles in question that the last word on the subject had not been said, and it was also apparent, did one stop to consider, that the midwife played a considerable part in the practice of obstetrics in Europe.

With this in mind, and a considerable interest in the obstetric situation as it exists, an attempt to secure more information on the subject was begun with the object of formulating an opinion which would be in keeping with the facts. Proceeding with this as the object, a rather extensive communication was carried on with various people interested in the subject throughout the United States. This included the leaders in the practice of obstetrics, officials whose work brought them in contact with obstetric problems, boards of registration in medicine, boards of health and various local organizations.

Briefly, the communications were requests for information and opinions regarding the obstetric situation generally and the midwife in particular with such facts as would aid in a study of the matter. I would take this opportunity to express my great appreciation of the kindness and courtesy with which my requests were received on every hand, and my great obligation for the many and extended communications from the various people mentioned. The replies could be easily catalogued as statistics of the opinions and facts regarding the whole subject of midwifery in its present status, but it would perhaps be more interesting to outline briefly the impressions to be gathered from this wealth of material.

* Read before the Chirurgical Society of Boston, April 23, 1915.

The striking feature of it all was what might be described as the uncertainty of the medical profession generally regarding the whole subject. It was usually apparent that the minds of many were in doubt as to the best and final solution of the obstetric problems which are so evident. Further the replies embodied two general possibilities. The first might be described as the ideal solution of the care of the parturient woman. This ideal is, that every such woman is entitled to all the benefits to be derived from care by a trained obstetrician, that such ably trained obstetricians should be in every community in sufficient numbers to care for all maternity cases and that by the high character of their work they would automatically suspend the activities of poorly trained physicians, midwives and every other agency which did not maintain this high degree of obstetric skill. The first premise—that every pregnant woman is entitled to the best that science can secure—needs no comment. The remainder of the idealistic program immediately raises a myriad questions, all of which resolve themselves into one of practicability, and therefrom has developed the second group of ideas which might be described as the practical method of dealing with the subject, and I am constrained to say, that the practical methods almost invariably include the trained midwife as a part of their procedure.

With but one or two exceptions, the opinions all agree that the midwife, as she exists at present in the United States, represents an institution intolerably below the standards which should be legitimately demanded. Perplexity as to the solution was the keynote of all these communications. The tendency, however, was toward the training and supervision of the midwife, and various steps, as you know, have been taken here and there with an idea of bringing about this regulation. In some places the midwife is legally ignored. In others, she is licensed to carry on her work, but without particular supervision. In still other states, some attempts at supervision are made, with some inquiry into the qualifications of the practitioners of this art. In others attempts have been made to secure these qualifications as well as to regulate the practice. New York, Pennsylvania, Maryland and Illinois may be cited as examples of states taking the most advanced stand in the matter of securing properly trained midwives.

Another opinion almost universally expressed concerned the unsatisfactory state of obstetric teaching and training in the medical schools. Dr. Moran of Washington expresses the general idea on the subject when he says, "In my judgment the medical curriculum needs to be materially changed. Surgery is today made the intensive course to the disadvantage of general medicine and obstetrics which are certainly of more vital importance to the recent graduate. The interne as a rule, is so enamored of the knife that he gives scant attention to the test tube, stethoscope and microscope. Obstetrics should be made the intensive course of the curriculum and I am constrained to believe that major surgery should be restricted to post graduate work. Much of the time now spent in the amphitheatre could be more profitably devoted to study and experience in the general practice and obstetrical wards."

In closing this very brief résumé of the opinions gathered from these communications, it is fitting to add that Boston represents the stronghold of what might be described as the anti-midwife attitude. It should also be added that throughout the country the condemnation expressed was not only of the midwife as she at present generally exists, but also of obstetrics as it is practiced by many physicians. Dr. Williams of Baltimore sums the situation up quite definitely when he says, "In regard to the midwife problem, we are in a very difficult position, as in my experience the average doctor who treats the poor, and sometimes the rich as well, does quite as much harm as the ignorant midwife. Consequently, I do not think that we are justified in trying to abolish her until we can put our own house in order. I therefore feel, that the first thing for doctors to do who are interested in the subject is to see that steps are taken to bring about proper obstetrical teaching in our medical schools and the foundation of institutions where that subject will be taught as a science rather than as a mere art. As long as students are taught that obstetrics consists merely in the delivery of women so long will it remain a discredited branch of medicine. After we have brought about these changes and are prepared to offer properly supervised outpatient care to the poor, then we should take up the question of abolishing the midwife."

On the other hand, a large number of the leaders of the medical profession headed by Dr. Jacobi and Dr. Edgar of New York, take another view and feel that the proper and practical solution of the whole problem is to be secured through the medium of the properly trained and supervised midwife in conjunction with the general better training of those physicians who practice obstetrics.

From the wealth of facts and opinions secured in the pursuit of this study, various deductions may be drawn. Obstetrics as a branch of medicine has been highly developed and is on a par with the rest of that science, but as such is practiced by the very few. As practiced by the rank and file of physicians it occupies a considerably lower plane than does the general practice of medicine and surgery, and as pursued by the few, represents a very low type of medical service. Why is this so? The practice of medicine as a whole is carried on by individuals as a private undertaking, unfortunately, but neverthless truly, representing not only a devotion to an ideal but a means of livelihood. This fact applied

to obstetrics discloses a very unpleasant truth. The time necessary to care properly for an obstetric case, according to present-day standards, cannot be given for the small financial return that the great majority of people can afford or expect to pay for such service, and the result is that this class of work is done because of its entering into general practice in spite of the inadequate return, or, worse, is poorly done by an inadequately equipped attendant for the inadequate fee, this latter including the midwife as she at present generally exists in this country.

This state of affairs has borne itself upon the public mind to a certain extent with the results that various private and institutional attempts to deal with the problem are evident. Nor must we neglect the part played by the institutions for medical training which in serving their own ends have also supplied a portion of various communities with excellent obstetric treatment.

It would, perhaps, be natural to inquire why this chaotic state exists as regards the practice of obstetrics, when, comparatively speaking, surgery as a whole, of which obstetrics is a branch, is standardized in a measure at least. The unpleasant statement was made that poor obstetrics seems to bear some relation to an inadequate financial return. Why is the return inadequate? Everyone has observed the rather anomalous situation of a family paying a very considerable sum easily and without apparent reluctance for some surgical operation, when the same family expects to pay for attendance during pregnancy and confinement the most meagre fee.

To understand this peculiar state of affairs we may perhaps with advantage consider what might be stated as the psychology of medicine. The science of medicine occupies in the eyes of the public at large an anomalous position. It is not regarded as an immutable science, but as a mixture of science, pseudo-science, and in part as a belief. We may even see the belief predominate to the exclusion of all else, and like that great example of belief, religion, it is found in many guises and forms. The average person by nature is more or less a practitioner of healing, with many ideas and convictions deeply rooted. In one of these deeply rooted convictions we are particularly interested as we discuss the subject of obstetrics. This is the idea which is held by the community at large, that the giving birth to a child is a manifestation of nature pure and simple. And nature in this, at least, is considered practically, if not entirely, self-sufficient. Nature requiring but a minimum of assistance to complete her work in her obstetric undertakings, obviously such a minimum of assistance should merit but a minimum of regard with the little that that entails. This minimum assistance has been rendered from time immemorial and in it we can see the obvious development of the midwife.

It is hardly necessary to indulge in a description of the transition from the earlier attempts at assisting nature, to the trained midwife as she at present exists in Germany, for instance. The midwife as an untrained practitioner of this art merits the condemnation that she has rightly received on all sides, but the midwife as an institution developed in some parts of Europe represents an attempt to solve a great problem, the culmination of much thought and study, and the whole representing conclusions we cannot lightly disregard. It is generally conceded that in Germany the most advanced steps have been made in the perfection of the community life. The nature of the government is such that should a certain procedure in the light of careful investigation seem desirable, that procedure can be put in force without such difficulties attending establishment of new civic regulations and procedures as would be witnessed in this country, for instance. Should it be decided after extensive investigation in Germany, that the midwife could with advantage be supplanted by any other agency, that supplanting could, and apparently would, be done.

The lesson we may learn from the method of dealing with the problem is not that the midwife institution represents perfection, but rather that it is the most practical means available. Attempting to apply the experience of other countries to this, we are confronted first with the necessity of public education which must precede all progressive legislation or regulation and which might obviously become a difficult matter. In the light of our experience in securing beneficent legislation concerning the public health, witness, for instance, the difficulties surrounding an attempt to secure such a desirable enactment as would ensure clean milk. In other words, it is questionable whether our community life would lend itself to the proper regulation of a work of this kind, in part because here an idea of central authority has not been developed to the point where community efficiency supplants individual efficiency.

There was one theme which pervaded all the writings and communications I was privileged to see, a theme often submerged, but always recurring and that theme was, that the midwife was "practicing medicine without being a physician." It has occurred to me that much of the adverse attitude of the medical profession to the properly trained midwife has unconsciously developed from this idea, and the question arises, if this work were carried on by trained nurses under the supervision of competent obstetricians, would not a different attitude toward the whole matter develop? This is not offered as a suggestion but rather as a possible explanation of some of the distrust with which the whole subject is viewed, and this without attempting to mitigate the part played in the production of

this distrust by the appearance on all sides of women practicing the art of midwifery with but the slightest, if any, qualifications to carry on that work. Nor should we ignore the fact that not even in Germany, where the development of the system and its regulations are carried out with regard to the minutest detail, which characterizes the German mind, is the system entirely above reproach in the eyes of those most interested and qualified to judge. Its continuance is partly the result of long established custom and partly because no better method has apparently been devised which is practical of application.

Emmons and Huntington, in an article discussing the subject, described workings of the German system and, as the result of their own observations, condemn it strongly. In the course of the article they quote from the *Journal of the A. M. A.*, which states that "the midwife is not so well regulated in this country as in Europe, but the harm done is probably less, since the midwives are not so numerous," which might seem to offer in several respects an opportunity for considerable argument, a statement which is based apparently on an opinion rather than on available demonstrated facts.

Leaving the general aspects of the question temporarily, let us briefly review the situation as it exists in our own community where we personally are most concerned. Boston's position as a leader in the advancement of the science of medicine is sufficiently well recognized to need no description. The work for the betterment of the general practice of medicine includes as well that branch devoted to the practice of obstetrics. The individual application of the knowledge and skill as exhibited by the leaders in this subject is of the highest order and merit. The teaching of obstetrics here is as complete as anywhere in the country, though that is saying but little, and yet the practical application of this comparative excellence to the whole community is conspicuously lacking. That every woman confined in Boston does not receive all the benefits available from high-grade obstetric care is due not to the absence of high obstetric ideals, but rather to the incomplete organization or machinery to supply that high-grade service to everyone.

The presence of medical schools increases materially the total number of obstetric cases that are properly cared for, which is a distinct advance Boston has over communities not supporting such schools, but even in Boston, the work done is not sufficient in volume to care for all the cases deserving of such care. It is to be noted also that the private charitable organizations doing the bulk of obstetric work among the needy, carry on that work as a part of the teaching propaganda of medicine. Without the medical schools, the number of cases receiving proper care during pregnancy would be reduced very materially, as must be obvious to anyone who would stop to consider.

In 1913 approximately 20,000 births occurred in Boston proper, not including the miscarriages which necessitate a material addition to the amount of work necessary to care properly for this class of patients. Statistics compiled by Emmons indicate that some 4,500 cases were attended in or by the various institutions doing obstetric work. A striking feature of this being that practically all of this institutional work was carried on by private organizations, while at least three-fourths of the cases were conducted as a part of the teaching of medicine. And, further, that of all the cases attended, less than 100 were cared for in municipal institutions. The city has practically left the whole care of its maternity cases to private organizations and physicians. Of the other 15,500 cases delivered in Boston, how many were cared for by private physicians for a return so small as to make it impossible to devote the attention necessary to the proper conduct of these cases? How many were delivered by physicians not competent to furnish high-grade obstetric service? How many cases were delivered by midwives, and what of the character of the midwives doing this work?

From time to time we receive from the schools of the continent well trained midwives. A part of their training includes the imbuing of a wholesome respect for the law. Finding that the law prohibits their practicing in Massachusetts, a considerable portion of these better class midwives refrain from attempting to practice. Those who do, represent a type without respect for legal or medical promulgations. The attempts in Boston to convict midwives of the illegal practice of medicine are interesting as a commentary on the peculiar status of the law bearing on the subject. In the last few years two convictions have resulted, but in both of these cases, while the practice of midwifery was the cause of attention of the authorities, the convictions were for a violation of the statutes in other respects than in practicing obstetrics without a license.

The attitude of the medical community toward the whole subject is not one characterized by a definite and comprehensive plan to deal with the problem, but seemingly favors continuance as at present until the idealistic state already mentioned is secured, until every one of the 20,000 or more cases per year receives the high grade obstetric attention correctly assumed to be their righteous due. Just how this is to be brought about, however, is not entirely discernable. The general scope of the plan seems to include more trained obstetricians, more dispensaries devoted to this work, and the elaboration of some such scheme as has been tried in Manchester, N.H., where various physicians have devoted a considerable time to the care of obstetric cases as a part of the work of a charitable organization.

The requirements of the situation demand a broad and comprehensive organization which can carry on a large amount of work, supplying good service on a large scale. The possibilities as have been indicated are: first, the trained midwife organization, the method adopted generally abroad as the not entirely satisfactory but most practical solution of the problem; second, the training in large numbers of obstetricians to carry on the work as individuals. Without discussing this factor at any length, it is interesting to consider a few possibilities. What does "the properly trained obstetrician" mean? It means the same as a properly trained surgeon about which we are hearing so much. It means seven or eight years in preparation with all that that implies. And is this extensive preparation for competition with the midwife in her special field?

The plea for better obstetric teaching in the medical school represents another method of attacking the problem of poor obstetrics and that it should result in a marked uplift is obvious. Unless the improved training is carried practically to the point that a skilled obstetrician results, may we not see an increase in what has been described as "meddlesome midwifery?"

The first and striking thing which impresses us is the lack of consideration given the subject by the community as a whole. What has been done for the sick poor generally? The many public insitutions for their care, aided by numerous charitable organizations, attest that this branch of social service, at least, is rescued from obvious neglect. It is a commentary on conditions that exist that practically no provision is made by the city to care for its maternity cases. Should a human derelict, in vain search for amelioration of his misery, accept the frequent and easy opportunity to indulge in alcoholic relief and thereby meet with an accident he would be the recipient of services by an organization, which would furnish not only the physical means but the skill to treat his injuries in a manner which would compare more than favorably with those of an individual having unlimited wealth at his command. The care and treatment of such a case entails a very considerable expense, which is willingly met by the city. In contrast to this consider the plight of a poor woman about to give birth to a child, whose care and attention depends on the possible charity of some private individual or organization, or worse, the ministration of a midwife, working without the pale of the law.

The problem is primarily an economic one, and as such, if not for humanitarian reasons, demands that the parturient receives throughout the course of pregnancy and confinement, the very best care that the community can provide. It must be apparent to anyone who considers the matter, that the present method, or lack of it, is inadequate to deal comprehensively with the situation, and that a radical and far-seeing policy for the ultimate development of a method of properly conducting this part of our community existence is imperative. In the author's opinion there are but two possibilities for such a comprehensive plan. First, the establishment of a midwife organization similar to that in operation in other countries; or second, the adoption of this problem by the city as one in which its vital interests demand its official participation. In other words, that the city should adopt the care of its maternity cases in the same way that it adopts the care of the needy when they are ill or infirm for any reason. Why should not a city the size of Boston have an organization devoted to the care of obstetric cases, which are unable to secure for themselves proper obstetric treatment? Communities too small to support such an organization should pay for the proper care of obstetric cases, as is already done in many places. The striking difference between the conduct of such a municipal lying-in hospital and the other municipal organizations should be the realization that the treatment of these cases is not primarily the treatment of paupers, but rather an appreciation of the fact that the state demands that every obstetric case receives through its whole course, the care that the importance of such a case demands. The taking of such a step by this and other communities would of itself tend to solve the so-called midwife problem, which is but part of the problem of poor obstetrics, and bring about that which all seek, the fact that every parturient woman receives the attention commensurate with present-day obstetric standards. This solution of a vital problem is advanced as a practical method of dealing with a situation which cannot be allowed to continue without the development of some method to secure its amelioration.

CONCLUSIONS.

From this study of the various facts and opinions presented, the following conclusions might be reasonably drawn:—

1. Education in obstetrics in the various medical institutions in this country is considerably below the standards achieved in other branches of medicine.

2. The practice of obstetrics generally is very materially below the standards of general medicine and surgery, due first, to the educational deficiency in this subject; second, to a low type of midwife service, the result of a practical absence of regulation; and third, due to the fact that the general attitude of the public at large toward the practice of obstetrics is not in keeping with the dignity of that subject.

3. That no comprehensive and far-seeing plan is generally being developed to cope with the situation as it presents itself.

4. That there is a distinct tendency in many quarters to adopt the midwife as an institution,

after the manner of its conduct in the countries of Europe.

5. That, while the whole subject of the proper obstetric care of patients needing this service is one of great economic importance to the state, there is practically no attempt at meeting this situation by the state.

6. That it would seem that our method of government is not adapted to the rigid requirements which the properly regulated midwife demands.

7. That the state should assume the management and control of this work, which is of the greatest economic importance, as readily and as well as it assumes the burden of caring for such of its citizens as are incapacitated by ill health or age.

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THE PREGNANCY CLINIC AND THE MIDWIFE: A COMPARISON.

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FROM some where, every once in so often, comes the plea for recognition of the midwife. Let us see why this is made in Massachusetts. In the first place we have a number of midwives, probably less than two hundred in the entire State, in active practice, but unrecognized, unregulated, and unprosecuted—for they are all defying the statutes of our Commonwealth. These women and the class of legal practitioners of medicine with whom they are closely associated are in the main responsible for this indefinite agitation.

Another group of agitators are those physicians who see all about them the results of bad obstetrics. They either feel that the midwife, as she exists today, is responsible for a large part of this state of affairs, and therefore she should be educated since she has not been suppressed; or else they feel that as the poor practitioner is responsible for most of this bad work it would be advisable to adopt the European trained midwife, feeling that any change must be for the better. Others urge this change because they feel that the immigrant will always cling to the midwife; they fail to understand the requirements of modern obstetrics, and believe that it is possible to educate these midwives so that they can give proper care to these immigrant women.

Now this present situation in Massachusetts is very far from being ideal. But the solution by changing the laws and recognizing the midwife is certain to make for a worse obstetrical situation rather than a better.

In the first place the responsibility for the brand of obstetrics practised so generally in Massachusetts today rests on the shoulders of the untrained and improperly trained practitioners. These outnumber the midwives ten to one, and they know little, if any, more about obstetrics than do the midwives with whom they are in competition. The medical schools which prepare these practitioners are also responsible for the conditions as they exist today; for they

allowed these physicians to enter practice without adequate training but with the idea that operative obstetrics is child's play, whereas operative surgery requires post-graduate training.

The standards required for admission to practice medicine in Massachusetts have been so low that many men of inadequate training have come to our State as a haven of refuge. Obstetrics is admittedly the poorest taught subject in the medical schools of America today. The result is that these physicians know practically nothing about obstetrics. Yet they have been educated out of the healthy dread of meddling which the untrained midwife possesses.

We see the background of obstetrical practice in the State. Let us for a moment see how this proposed change would work out. What is to become of the midwives in practice today? Are they to be allowed to practice without any more education than they now possess?

Of course when education of the midwife is suggested, one means training in a lying-in hospital or out-patient dispensary, so arranged that the midwife shall be fitted to take the responsibility of the case. Merely giving an ignorant woman an opportunity to observe for a few months the conduct of normal labor, and assist in the after-care, is not education but only the familiarity that breeds contempt.

At the present time there are not enough obstetrical opportunities in the hospitals of Boston, our only medical school center, for the proper education of all our medical students in residence. Thus we see that the midwives would have to be educated outside of Boston or else their education would be at the expense of the future medical practitioners. But outside of Boston there are few, if any, lying-in hospitals properly equipped and doing a sufficient amount of work to undertake this new departure. It means, therefore, the establishment of new schools. How are you going to raise money to build and equip these schools? How are you going to get pupils to fill them? Supposing you could force the graduates of the famous European schools for midwives to enter these schools, would they profit by the training? A large proportion of the women practicing as midwives in Massachusetts have this training—over 36% in 1912,—also these trained women have the largest practice as a rule. Thus we see that we should have many problems to solve before we can educate the midwife in Massachusetts.

It would not be a difficult problem to establish the machinery for licensing the midwife. She would have to appear in person at the State House and pass an examination and pay a registration fee, that would be all; but how would it be possible to prevent the unlicensed midwives from practicing? We see how futile the law is at present; all the women practicing as midwives are breaking the law now, yet very few are prosecuted annually. Would more be prosecuted if some midwives were licensed and only a few were violating the law? When we have seen the numerous violations of the law governing the practice of medicine in Massachusetts and the indifference with which these violations were met, it is hard to believe that the license to practice as a midwife would be worth very much. Law that is not backed by public sentiment is futile; public sentiment in Massachusetts is absolutely indifferent as to whether midwives practice or not or whether they are or are not licensed.

But supposing the machinery for the proper education of the midwife is established and public sentiment is aroused to enforce the midwife laws, is it going to be an easy thing to regulate the midwife in her practice? Proper regulation means supervision by trained physicians and nurses. This would be expensive and could not exist without the loyal support of the police department.

After a few arrests and convictions the system would probably work as well as the midwife system does in England or in Germany, certainly no better, provided the medical education of the midwives and of the physicians on whom they would be compelled to call for help, were up to the European standard. In other words, the midwife system depends finally on the efficiency of the medical profession, for the midwife must keep in constant touch with a physician in all her abnormal cases.

Now by developing a midwife system a dual standard is established in obstetrics. Unlike all other branches of medicine, there would be two classes of practitioners,—one to care for the normal uncomplicated case among the poor, the other to care for normal cases except among the poor, and for abnormal cases wherever they occur. This seems hardly a fair division of service at best. Is there no other alternative?

We are told right along that the immigrant cannot be weaned from the midwife, and that is the strongest argument given by those in favor of the midwife and her education and regulation. That she not only can be, but has been, weaned from the midwife can be seen by the casual observer who will spend a morning in the Pregnancy Clinic of the Boston Lying-in Hospital. Every day Russians and Italians are flocking to us for care. No one possessed of any knowledge of the essentials for the proper care of pregnancy, labor and the puerperium would pretend that midwives, no matter how well trained they are, could give the care these patients are receiving.

The Boston Lying-in Hospital was the first to establish a real Pregnancy Clinic in Boston in connection with its other work, and has today by far the largest Pregnancy Clinic in New England. It was started in 1911 and now there are at least three other similar clinics in Boston, besides others in smaller cities, all working along the same lines.

Let us now glance at the care given as routine and the results obtained last year.

All patients are urged to come as early in their pregnancy as it is possible, and every year more patients are coming to us before the fifth month, many for the diagnosis of pregnancy. A careful history is taken, and the details of the proper hygiene of pregnancy are explained. Every patient has a complete physical examination at the first visit, including a Wassermann test (this test is carried out at the State Board of Health Laboratory), an examination of the urine, and a determination of the blood pressure. Every patient is required to return for examination at the end of four weeks or sooner if any symptoms arise. Should any abnormality be noted the patient is told to return promptly, the exact day being specified, to see how treatment is affecting the condition or to establish more definitely the line of subsequent treatment of the case. Should any grave complications be noted, the patient is referred to the Hospital for treatment in the wards. All cases where the pelvis is so contracted as to offer any question as to the outcome of the labor, are referred to the Hospital for examination by the visiting physician.

All patients making their subsequent visits are carefully questioned as to how they are following out the rules for the hygiene of pregnancy, their blood pressure is taken and their urine is examined. Many of our patients who are to be delivered in the Hospital are visited in their own homes by our Pregnancy Clinic nurse, who goes over carefully all the points touched upon in the Clinic and does what she can for the comfort and welfare of the patient. Patients who are to be confined in their own homes are similarly visited by the nurses from the District Nursing Association. These visits are made about every ten days or oftener if necessary.

Of course, most of our House patients make some return to the Hospital for the treatment they receive. Our out-patients do not, being merely allowed to make a voluntary contribution to the support of the Hospital. These voluntary contributions, averaging about 76 cents per patient, brought in over $1500 last year.

The results obtained in the Pregnancy Clinic of the Boston Lying-in Hospital last year are as follows:

NEW APPLICANTS FOR TREATMENT.

Referred from the hospital	526
Referred from the out-patient department	1259
Referred for consultation from other institutions	14
Subsequent visits	2727
First visits of babies	20
Subsequent visits	16
Total number of visits	4562
Total number of new patients	1799
Remaining under observation from previous year	268
	2067
Subsequently delivered in the hospital	432
Subsequently delivered in the out-patient department	1055
Not pregnant	16
Removed from district	11
Discharged to private physicians	12
Ceased attendance or otherwise provided for	219
Consultations from other institutions	14
Died undelivered	2
Remaining under observation	306

Of the 2067 women under the care of the Pregnancy Clinic during the year 1914, 592 presented the following complications of pregnancy:

Contracted pelves of varying degrees	228
Albuminuria without other signs of toxemia	137
Definite symptoms of toxemia	72
Elevated blood pressure without other signs of toxemia	47
Heart lesions	41
Ante-partum bleeding	17
Miscarriage	5
Acute hydramnios	6
Pyelitis	6
Phthisis	4
Syphilis	4
Gonorrhea	3
Hemorrhoids (giving acute symptoms)	3
Diabetes	2
Flat foot (acute)	2
Congenital malformation of the rectum	1
Cyst of mammary gland	1
Epilepsy	1
Exophthalmic goitre	1
Fibroid uterus	1
Mastitis	1
Ovarian cyst	1
Peritonsillar abscess	1
Phlebitis	1
Placenta praevia	1
Pruritus vulvae	1
Purpura	1
Scarlet fever	1
	592

Of the 1487 women from the Pregnancy Clinic delivered in the Hospital or in the Out-patient Department there were

Discharged well	1418
Discharged to private physicians	8
Discharged to other institutions	3
Discharged dead	6
Remaining under care	52
	1487

The work of such an institution is educational. We educate the community to appreciate the value of good obstetric care; we teach our patients how to obtain this care and our students how to provide it.

We feel confident that this is the solution of the obstetrical problem in Massachusetts, offering far better results than could the midwife, no matter how well trained and regulated. By the increase in the number of such institutions we are encouraged to believe that the midwife will gradually disappear, being superseded by the modern obstetrical dispensary.

CLINICAL RECORDS IN RELATION TO TEACHING AND RESEARCH—A PLAN TO PROMOTE CONSERVATION AND UTILIZATION OF MATERIAL.*

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IN connection with the reörganization of the University of California Hospital in 1912, one of the important problems presenting itself was that of hospital records. To the teacher and research worker especially, very few details connected with the running of a university hospital equal in importance the clinical record system. From the economic standpoint alone, it is clear that for this type of hospital where the cost per bed per day is unusually high, a system which makes possible the greatest utilization of past material as well as present has a high value; and if considered solely as an investment, it would more than justify the small extra expense required. It is the duty of all hospitals, however, and especially university hospitals, to take a broader view of economy than the immediate saving of dollars and cents. The ultimate benefiting of the race, the lessening of disease and its more efficient alleviation through medical research are justly coming to be regarded as the most profitable type of benevolent investment. And the charitable hospital that neglects opportunities to advance medical science is like the manufacturer who throws away valuable by-products. That the great majority of American hospitals are following such a short sighted policy of neglect is truer, I believe, than is generally appreciated. Not only is the proper kind of research on current cases too seldom undertaken; but, for want of sufficiently accurate, complete and accessible data, a vast amount of useful material is constantly thrown beyond the reach of those in the future who would utilize it.

It was such considerations which prompted and, we believe, more than justified our small increases in time and money expenditure for developing the hospital record system. The university was fortunate at the outset in adopting the general plan of records followed at the Massachusetts General Hospital, and later in securing for the custodianship of the records Miss Genevieve Clark, who received her training under Mrs. Grace W. Meyers. The details of this system have been ably presented before this association by Myers,[1] Hollings[2] and Howland[3]; and here it will be necessary only to reëmphasize the following points: (1) The necessity for adequate administrative machinery to insure getting uniform and correct data in regard to patients' names, addresses, etc.[4] (2) Permanency of the records. Only good rag paper[3] and non-fading ink should be allowed.[3] By all means the records should be substantially bound and kept in a dry, fire-proof place. (3) Economy in paper, binding, and fire-proof storage as well as convenience in handling will result from using both sides of the paper and limiting the number of extra laboratory sheets, etc.

COMPLETENESS AND ACCURACY OF CLINICAL RECORDS.

The hope of having anything but haphazard and fragmentary clinical records should be abandoned by any institution whose visiting staff will not give time and energy to the undertaking. An essential element is standardization of the general form of records and method of filing; and to this end by far the most business-like and effective plan is to give over the direction of the record system to some one member of the staff who has the requisite insight and abundant interest in the undertaking and patience to carry it out. He will encounter a large number of details, and for a long time will have to educate other members of the staff as well as internes and nurses. Such an educative campaign is helped by frequent reports sent to the staff indicating for each service such items as: Number of operations or autopsies performed before the clinical diagnoses were recorded, number of records turned in with no blood pressure reports, etc., etc.

An unusual advantage is enjoyed by university hospitals in being able to train interns for two or three years before they begin their service. In the University of California a few weeks after the second-year medical students begin the course in physical diagnosis and history taking, they are given an outline of history and physical examination records, which they follow from then on in reporting their cases, and which is prescribed for the use of interns. The exact form of this outline is not so important as it is to have uniformity in the general arrangement, which lessens the number of important facts overlooked in the writing and greatly facilitates later endeavors to hunt up statements that are wanted. Much stress is laid upon history taking, and students are given a good deal of practice in it; the aim in teaching being first for accuracy and completeness and second for conciseness and the elimination of irrelevant matter. Hospital interns are chosen from among students who are known to write acceptable clinical records. We are opposed to the idea of allowing student histories to go into the hospital records, on the ground that the high value of these records merits for them the best help available.

One common defect of clinical records is that they do not make clear to the one who reads them several years later the exact nature of various procedures mentioned, *e.g.* the deter-

* Presented before the American Hospital Association, June, 1915.

NOTE.—This article together with Dr. J. L. Whitney's article on page 772 of this issue is part of a series of articles on the subject of clinical records. Others in the series are appearing in the *California State Journal of Medicine.*

mination of sugar or urea in the blood, or the technic of blood pressure measurements. Incomprehensible abbreviations are also prone to creep into the records. The latter may be avoided by supplying a list of permissible abbreviations[4] and insisting on their exclusive use. This may well be incorporated into the history outline prescribed for students and interns and a copy bound with the records. The usefulness of the abbreviations will depend upon their simplicity and fairly obvious meaning.

The record forms[4] should be carefully planned to encourage completeness in reports. Thus, in connection with the differential count of leucocytes should be stated the number of cells on which it is based, since this will very largely determine its value. For the same reason the test used for occult blood, the method of determining sugar percentage, of reading blood pressures, etc., should all be indicated.

Ambiguity in other reports we have planned to avoid by the use of a "ward reference book"[4] containing the exact description of various clinical procedures in use which have not as yet become well established in the text books. The book has loose leaves and an alphabetic index; and whenever it is decided to try out something which is not already a ward routine, for example, functional liver tests, someone looks up the literature and writes out the exact technic to be followed, together with references and the date when the addition to the book is made. A copy of this ward book is bound with the first volume of the medical records as a sort of preface; and from time to time additions or changes are to be noted in later volumes, so that at any future time it will be possible by comparing the data of a given history with the dates on these introductory pages to know the exact technic in vogue at the time. Aside from this help in clarifying the records, this ward reference book is found very useful to interns and students who are set at tasks that are new to them. The book also contains the prescribed history outline and examples of the exact form in which various routine clinical reports are to be entered.

The training school for nurses as well as the medical school is a valuable asset in the development of good clinical records. Nurses are readily taught the technic of blood pressure determinations, using the palpatory index for systolic pressure and the change or disappearance of sounds for the diastolic. With proper supervision, we believe their readings to be reliable. The result of this training is that nurses in the out-patient maternity service can keep track of patients' blood pressures; also that in ward cases, when desirable, blood pressure readings may be taken as often as the temperature and pulse. This is not at all inconvenient when a machine is left clamped to the bed and perhaps even the cuff left *in situ*. Nurses readily do this as part of the ward routine, whereas the inconvenience of it on the part of the staff is practically prohibitive. Nurses are also trained to count the heart rate by using the stethoscope and to record this as well as the ordinary pulse count when there is a discrepancy. If desired, they can also record specific gravity of the urine, its daily amount, and patients' weights.

Pupils in the training school are made to feel that accuracy and neatness in their reports are essential parts of their training; and since this attitude has been taken they respond almost without exception with pride and interest in making their records as good as possible. The charts are no longer hung on the beds where they are almost certain to be soiled; but each, together with the intern's clinical record, is safely kept in an aluminum binder in its pigeonhole on the nurses' desk. One nurse at a time is responsible for the charts in a ward. The result is that although a great deal more matter is now put on these charts (7 to 9 separate graphs)[4] and they cover more days than formerly (three weeks of four-hourly observations on a page), the need for recopying is much less frequent.

For the further promotion of completeness and accuracy, the records before filing are reviewed by the interns and residents, by the chiefs of service when they write the diagnoses, by the custodian of records, and finally by a member of the medical staff who is conversant with the diagnosis nomenclature and filing system, who makes sure that the form of the diagnoses will result in their proper filing, and who also adds secondary diagnoses which may have been overlooked.[3]

After filing, the records are still incomplete until every effort has been made to secure end results by an efficient follow-up system.[1, 4] Such a system should embrace the records of all services and should include: (1) The psychological preparation of patients leaving the hospital. (2) The personal note so far as possible in the follow-up letters. (3) Provision for follow-up letters at shorter or longer intervals according to the nature of the case. (4) Coöperation on the part of the out-patient staff by transmitting to the house record room notes of important developments in cases seen by those who have been in the wards.

ACCESSIBILITY OF MATERIAL.

This is only secondary in importance to completeness and accuracy. Heretofore it has not to my knowledge been customary, even for hospitals with high standards, to do more in this direction than keep a diagnosis card catalog with perhaps cross references to the main complications and a separate set of cards referring to regions affected and to operations. While such a catalog is essential (it should contain many more secondary diagnoses than is usual)[5] and admirably serves the purpose when it is desired to look up cases of a certain disease, it is of little or no help to the one who wishes to analyze, for example, cases with high white blood count,

cardiac arrhythmia, or albuminuria, or cases who have had vomiting or chest pain or dizziness as a symptom, or who have had typhoid fever in the past, or in whose families there was tuberculosis or obesity, etc., etc. Heretofore the only approach to such data has been through tedious hours or days or weeks of reading old records; and it is not surprising that comparatively few analyses from such points of view have been made. An experiment which we have carried out during the past two years has shown that with comparatively little initial expenditure of time, it is possible to make such facts as these as accessible as the diagnoses themselves.

A large card (reproduced herewith) the size of the record sheets (21.5 x 28 cm.) is printed on one side. At the top are spaces for the patient's name, age, hospital number, and diagnoses, etc.; and on the remainder of the card are headings to cover the main points in family history, past history, present illness, physical examination, laboratory and other clinical procedures. One of these "clinical index cards" is sent by the office with each case admitted to the medical service; and the intern while writing the regular history at the bedside underscores or negatives items on the card referring to history. *E.g.* he underlines "typhoid" if the patient has had typhoid fever, and he draws a circle through the word if there is no suggestion of typhoid in the history; but if, for any reason, the information cannot be obtained or is doubtful, the item is questioned or not marked at all. Since it is not desirable to fill the regular history with a great many negative statements which do not have an obvious bearing on the case, this card places on record many negative facts which otherwise would certainly not be preserved.

The remainder of the work on this index is done in the record room. After reviewing the marks made by the intern, the custodian proceeds to read the present illness, physical examination, the later clinical notes on the case, as well as the temperature and laboratory charts, and checks off the findings on the index card. For example, if the spleen is felt or is enlarged to percussion, the word is underlined on the card; if a heart murmur or cardiac percussion change is noted, "heart" is underlined; if astereognosis or cutaneous anesthesia is present, "sensory changes" on the card is underlined, and so on. It is obviously impossible and not desirable to go into further subdivisions on the index card. Its purpose is not at all to take the place of the clinical record, but to assist in finding the desired material in the records. If one wishes to collect the cases in which anesthesia or hypesthesia was found, a clerk in a few minutes will turn over the cards for a year and get together all the cases that have shown "sensory changes," and among these will be the desired material.

A few important treatments are listed, such as digitalis and intravenous medication. All the common laboratory and bedside clinical procedures have a place, such, for example, as gastric lavage, puncture of chest, spinal canal, etc., functional tests, complement fixation tests, sensitization tests, x-rays of various parts of the body, pulse and other tracings, photographs, physical measurements, etc. These are simply marked to show which were done. The results of tests are indicated only when they can be expressed by a mark or two (*e.g.* Wassermann, Widal, tuberculin, phenolsulphonephthalein elimination, etc.) Similarly the card when finished contains the highest and the lowest recorded figures for temperature, pulse, respiration, white blood count, hemoglobin, systolic and diastolic blood pressure, amount of urine, etc. The range of usefulness thus afforded is great. Within a few minutes one can have placed before him the records of all cases that have had fever with big spleen or low white count or positive Wassermann or blood culture; cases with headache as a symptom and systolic blood pressure above 170 or hemoglobin below 50%, etc., etc.

It will be observed that the card is designed to give unusually complete information regarding diagnoses, showing who made the clinical diagnoses and how far they were corroborated or amplified or contradicted by operation or autopsy. Pre-autopsy diagnoses have always been difficult to obtain in definite written form. A method for securing them with a good deal of certainty was devised by my colleague, Dr. J. L. Whitney. It consists of a form giving authorization for the autopsy and containing space for complete clinical diagnoses as well as a short résumé of the case for the benefit of the pathologist and space for the pathologist's diagnoses and remarks. Special comment is made by him on clinical findings which fail to receive clear explanation at the autopsy table. The superintendent will not sign this permit for the examination until the resident of the service has written his diagnoses. The sheet is bound with the records.[4]

An important space on the card is that marked "special." In it are written special items from the clinical notes which are not in the printed outline, often observations by members of the staff. For example, during thoracentesis, the patient faints and is given stimulants. The opportunity is quickly taken of observing what happens to blood pressure, pulse rate, etc. Following the regular description of the tapping in the record will appear an account of the incident under the underlined heading "syncope and circulatory stimulants." This caption will later be copied under "special" on the clinical index card for that case. Other examples are: "Blood pressure in arm and leg," "Respiration experiments," "Electrical conductivity of serum." To the worker who is doing a series of clinical experiments this offers a convenient and safe way of preserving his material; but its chief value lies in the saving of what would otherwise certainly be lost, namely the many valuable clinical observations made over a period of years in

UNIVERSITY OF CALIFORNIA HOSPITAL

.... 19....
Hosp. No. Name Age Entered Hospital

Clin. Diagnoses (Those dated *before proof* by visiting staff marked "V", by resident "R", by interne "I" Those proved correct "c," wrong "w".

....
....
....
....
....

FAMILY HISTORY.

Alcoholism	Obesity	Tuberculosis
Apoplexy	Epilepsy	
Cancer	Insanity	
Diabetes	"Nervous breakdown"	
Gout	Miscarriages	

PAST HISTORY.

Race { F.....
M.....Birthplace.....

....
....
....

Residences in last 10 years — Occupations in last 10 years

Measles	Chorea	Gonorrhea
Mumps	Arthritis	Habits:
(with orchitis?)	(ac. art. rheum.?)	tea..... cof.....
Whooping cough	Tonsillitis	alc..... tob.....
Chicken pox	Pneumonia	drug.....
Smallpox	Pleurisy	
Vaccinia	(tapped?)	Operations:
Scarlet fever	Malaria	
Diphtheria	Otitis media	Injuries:
Typhoid	Genital sore	

SYMPTOM CATALOG (FROM HISTORY AND LATER CLINICAL NOTES)

Pain:
Head
Face, throat, neck
Chest
Abdomen, pelvis
Back
Extremities

Joint Symps. (not pain)

Other sensory changes: an-, hyp-, hyper-, or paresthesia, abn. temp. sense

Neuro-muscular apparatus: weakness, paralysis, gaits, tremors, contractures, atrophies

Speech defect (including aphasia, agraphia, etc.)

"Nervousness"
Vertigo
Convulsions
Unconsciousness
Mental changes
Miscel. psychic phen.

Sphincter: rect., blad.

Other G. U.

Eye: spots, flashes, blindness, diplopia

Ear: deafness, tinnitus

Respiratory: nose, throat, larynx, cough, dyspnea, orthopnea,

Circulatory: palpit., flushing

Digestive: anorexia, other appetite, constipation, diarrhea, vomiting

Blood from nose, lungs, stomach, rectum

Body surface: pallor, jaundice, edema, itching, sweating, falling hair

Feverishness
Chills
Malaise
Sleep
General strength
Wt.: gain, loss

PHYSICAL FINDINGS.

Body surface:
edema, jaundice, pigment., cyanosis, purpura, herpes

Head and face: ear
Eyes: ext. musc.
pupils, reactions, hyperthyr. signs

Mouth	Throat
Thyroid	Lymph nodes
Chest	Lungs
Heart	Arteries
	Veins

Abdomen:	tenderness
mass	peristalsis
liver	spleen
R. kidney	fluid
hernia	L. kidney
penis	testes

Back

Extremities

Reflexes:	Abs.	Dim.	Inc.	Uneq.
Patellar				
Achilles				
Abdom.				

Abnorm. refl.

Clonus
Hyper- or hypotonus

Motor changes:
tremor
Sensory changes
Mental changes

Rectal exam.

Special exams.: Eye, Nose, Throat, Ear
Tracheoscopy
Gastroscopy
Esophagoscopy
Proctoscopy
Cystoscopy, etc.

Consultation:

—CLINICAL INDEX CARD, MALE MEDICAL

RE-ENTRY AFTER ..... MOS., No ..... REPORT AFTER..... MOS.

..... " " ..... " " ..... " " ..... "
Days in Hosp.

Additional Diagnoses proved by operation or autopsy

....
....
....
....
....

OTHER CLINICAL DATA.

	Highest.	Lowest.
Temp. (r.= rectal)	.....	.....
Pulse (irreg.?)	.....	.....
Resp. (irreg.?)	.....	.....
Bl. pr. max.	.....	.....
Bl. pr. min.	.....	.....
Liquids (c.c.)	.....	.....
Urine: amt. (c.c)	.....	.....
Sp. grav.	.....	.....
Albumin	.....	.....
Sugar	.....	.....
NaCl	.....	.....
Total solids	.....	.....
Blood: % Hgb.	.....	.....
Reds	.....	.....
Whites	.....	.....
% Neutro-	.....	.....
% Lympho-	.....	.....
% Eosino-	.....	.....
% Lg. mono-	.....	.....
Plates	.....	.....
Urea	.....	.....
Noncoag. N.	.....	.....
Bleeding time	.....	.....
Coag. time	.....	.....
Fibrinogen	.....	.....
Functional Tests:		
Phen-sulph-phth.	.....	.....
KI	.....	.....
Lactose	.....	.....
Levulose	.....	.....
Weight	.....	.....
Chest capacity	.....	.....

Ht.=.....cm.
Physical measurements.
Strength tests.
Electrical reactions.

Sputum:
T. B. Influenza
Pneumoc.

Feces:
Blood
Parasites

Gastric lavage
Duodenal aspiration

Puncture of:
Spinal canal
Pleura
Pericardium
Abdomen

Sensitization Examinations:
Tbc. cutaneous
Tbc. subcutaneous
Luetin

Complement fixation:
Trepon. pallida { Bld. / Sp. F.
Gonococcus

Other Serological Exam.:
Agglut. typhoid
Agglut. paratyphoid

Special Chemical or Physical Examinations:

Bact. or Path. Exam.:

Graphic Records: Resp.
Electrocard., pulse tracing

SPECIAL.

Photograph of:
Plaster models, etc.

Röntgen Exam.:	Plate	Fluoro.
Head	.....	.....
Chest	.....	.....
Abdomen	.....	.....
Extremity	.....	.....

Treatment

	Fluid.	Food.	Medicine.
Rectum			
Subcut.			
Musc.			
Veins			
Intra-spinal			

Digitalis and allied drugs

Venesection
X-ray

NOTES:—Positive findings (*e.g.* an acknowledgment of a disease or a symptom by the patient or an abnormality discovered in exam. or lab. test) are underlined, negative ones marked out with a zero (0), and doubtful ones marked "?". No mark means information not obtained. A check (√) means test done without indicating result. A heading underlined means an abnormal finding outside the list following it. A heading marked out with zero indicates a general negative statement in record, *e.g.* "reflexes normal."

routine ward work, especially those which are not frequently repeated.

It is needless to draw out the comparison of this *availability* and its ever expanding usefulness with the hopelessly lost condition of similar valuable observations which are numerous in the records of most good hospitals.

To the plan outlined above there appear to be three possible objections,—that it is complicated, that it is expensive, and that it necessitates trusting too much to the discretion of a person without medical training.

In answer to the first: It is as simple as it can be and yet give the results, and it works well. After two years' trial on the medical service, its use is now, with suitable modifications, to be extended in the University of California Hospital. It should not be undertaken, however, by any institution which is not prepared to employ a well trained custodian of records, and where there is not at least one member of the staff who will take a large personal interest and devote considerable time to it until it is well established. Profits are not to be reaped without this much invested.

In regard to the cost: The large clinical cards may cost one or two cents each; and the record custodian averages about 20 minutes or 13 cents' worth of time, in going over each medical history and transferring the data to the index card. This is estimated to be about one-third to one-half as expensive as it would be to have our records typewritten. Parenthetically, it may be added that, on grounds of accuracy and also of conciseness, we prefer originals to typewritten copies.

The member of the staff who checks up the work of the record clerk at first will have to verify each item on the index cards. Within a day or so an intelligent clerk will learn to transfer the material from the chart and laboratory reports with very little further supervision; and in a few days of training she will do almost as well with the history and physical examination. She should, however, have assistance permanently in this part of the work. After six months' experience, Miss Clark's practice is now to mark places where there is any question, and two or three times a month I spend half an hour with her reviewing the work. It looks as if in the future still less of my time will be required. The mistakes that one without medical training will make in this work are usually in checking off too much rather than too little; an unusual wording in the description of heart or lungs may lead her to record the findings as abnormal when they are not so. Since the cards are only to be used for finding data in the regular histories, the only result of such errors would be that when one is looking over a series of cases for some particular finding he will run across an occasional history that does not contain what he is looking for.

SUMMARY.

Experiences are reported in the coöperation of a university hospital, medical school and training school for nurses to promote accuracy and completeness of clinical records. To the same end a few suggestions are offered concerning methods of recording certain data, but these are being taken up in detail in other articles. In addition to the usual diagnosis index (which should be made to include many more of the secondary diagnoses) a plan is described for indexing many clinical facts which cannot be included among the diagnoses.

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THE NOMENCLATURE AND CLASSIFICATION OF DISEASES IN USE IN THE UNIVERSITY OF CALIFORNIA HOSPITAL.*

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THREE years ago the University of California Hospital took certain definite steps toward enlarging its field of usefulness both as a servant of the public and as a teaching institution. This involved much work of construction and revision in bringing various details of hospital management into line with modern and efficient methods. Not the least important of these problems was that of finding or devising a system of nomenclature and a scheme of filing the hospital records which should accomplish certain desired objects.

The first of these objects was uniformity of nomenclature in diagnosis. The second was a method of indicating to the clinician, by means of a classification of diseases as complete as possible, the degree of fullness and accuracy desired in this particular, and, further, of indicating the desirability of establishing in each case various relationships, chiefly etiological, which were felt to be indispensable for the purposes of scientific research.

The third, and perhaps most important object was to have a system of filing which should render easily accessible the wealth of material too often permanently locked up in the hospital records. It seems hardly necessary here to dilate upon the fact that the investigations carried on in a hospital case, frequently of little enough importance to the patient himself, often acquire their chief value only when they can be

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NOTE.—This article together with Dr. E. S. Kilgore's article on page 767 of this issue is part of a series of articles on the subject of clinical records. Others in the series are appearing in the *California State Journal of Medicine.*

collated with similar investigations carried on in many other cases. Such collation is made almost impossible in the absence of a filing system which will enable the researcher to lay his hands easily upon the desired material.

Fourth, it seemed highly desirable that the method adopted should be flexible enough to allow of additions and modification in the light of new knowledge.

Fifth, the system must be as simple and practical as is consistent with the attainment of the ends desired. After considerable investigation it was decided to devise a system of our own, rather than to adopt any of those which were available to our hands. The reasons for that decision will be later discussed.

In the preparation of this scheme the requirements as given above were constantly kept in mind. A brief outline will be given here to illustrate how these requirements were met.

The attainment of uniformity in nomenclature was in most cases simple, though in others it involved the selection from a number of alternatives of that term which seemed most appropriate. As there is at present no final authority as to the standing of medical words, this selection had to be in many cases rather arbitrary. It has been generally the rule to adopt that term which seemed to be supported by the best usage, though, where possible, preference has always been given to simplicity, to English rather than to foreign words, and to good etymology,—and of this last it ought to be said that no other science has such a collection of bad etymology as medical terms display. Anyone dabbling in terminology must strongly feel the need of an authoritative body to revise thoroughly medical terminology, and bring medicine into line with all other sciences in this respect. In the preparation of this classification, however, temptation has been resisted, and nothing very radical has been done in the way of offering substitutes for terms where long use rather than respectable antecedents has given them standing.

One instance may, however, be given in which, for the sake of clearness, some departure has been made from common usage. This is in relation to the adjectives *acute, subacute,* and *chronic. Subacute* is not accepted in any case, occupying a position entirely too vague between the other two. In most instances it can be replaced by *acute. Acute* and *chronic* are very unfortunate words, since their meaning is never clear. Ordinarily they imply a short or long duration of the process, but no fixed limit can ever be set. Sometimes, as in the case of nephritis, acute means rather self-limited, while chronic implies incurability. In other instances acute is taken to mean a more violent form of the disease than subacute or chronic, quite apart from the time element. Again, the pathologist uses the terms wholly on the basis of the kind of cells present on microscopical examination. According to this usage a chronic (*i.e.,* a fibrous) peritonitis can develop in a week, which to a clinician seems a good deal of an absurdity. In this sense chronic often signifies merely the scars that follow a once active process.

To meet this difficulty, it seemed best to discard at least the word "acute" in many instances where the situation was worst. For example, an infectious endocarditis is essentially the same process whether it lasts a week or two years, yet a two-year old process can hardly be called "acute." In this case we suggest the use of the terms "active infectious" and "chronic fibrous endocarditis." Inflammations of the serous surfaces offer a similar difficulty. In the case of pleurisy, for example, we recommend the terms "fibrinous pleurisy," "fibrous pleurisy" and "pleurisy with effusion."

The second point is that of completeness in detail, and accuracy. We wish to have the clinician state, and to be prepared to catalog, every pathological condition of any importance which a given patient may show. Such subsidiary conditions as secondary anemia, ascites, coma, etc., are ordinarily not set down as part of the diagnosis, but it often becomes highly desirable to collect, for comparison or for further study, all the cases which have shown just such conditions. We ask the clinician to supply these data, and we furnish as a model an outline of the lesions possible in a given disease. We further distinguish between complications (*i.e.* conditions dependent on the main lesions), and coincident conditions not causally related and in the cataloging this causal relationship is indicated.

We try to avoid collective terms as being insufficiently accurate, and ask that all lesions present in a complex be named. "Genito-urinary tuberculosis" is replaced by "Tuberculosis of right kidney, ureter, bladder and epididymis," while "Cardio-renal complex" gives way to "Chronic nephritis and myocarditis," or whatever the combination is believed to be. Of course a certain number of such less accurate diagnoses, as well as some symptomatic diagnoses, are unavoidable, often because the study of a case has not been finished, but provision is made for the listing of such cases under less specific headings.

Causal relationships, and etiology in general, have been considered of the greatest importance.

We wish to have stated in the diagnosis not only each lesion present, but its cause, and its connection with other lesions. The diagnosis of "bronchitis" is not complete unless we know the organism that caused it. The diagnosis of "chronic endocarditis, and syphilis" is not satisfactory unless we are told whether the one was the cause of the other.

Where the etiology can be satisfactorily established, the diagnosis is primarily listed on the basis of the organism or other causal agent. No other of the systems which we have examined has gone to the same extent in grouping diag-

noses on the basis of primary cause. Such lesions as those of syphilis and tuberculosis have very commonly been grouped under an etiological heading. We extend this method to include every case where the organism or other etiological agent has been determined upon. In the infections the organism itself forms the basis of division rather than the pathological lesion: thus, the heading pneumococcus rather than pneumonia, and streptococcus viridans, etc., rather than rheumatic fever. The same correlation of cause and effect is sought after in other diseases than infections, as diabetic cataract, lead neuritis, amebic liver abscess. We try to connect even late results with their causes, as poliomyelitis deformity, fibrous endocarditis due to rheumatic fever, feeble-mindedness following encephalitis.

In order to accomplish this accuracy and detail in diagnosis, it has been found advisable that a member of the staff spend a short time once a week in running through the current histories ready for filing, and see not only that the diagnoses conform to the system, but that all the desired secondary diagnoses and etiological data are indicated in each case.

The next consideration was the arrangement of the catalog in such a way as to be of the greatest assistance to one who was gathering material for investigation. This necessitates the throwing together of those cases which are likely to be studied as a group. If tuberculosis were the subject of of investigation, the tuberculosis section should include such lesions of every part of the body. If, on the other hand, diseases of the lungs were being considered, it was desirable that every lung condition be found in one place. Therefore, logic demands that tuberculosis of the lungs be filed both under the heading of tuberculosis and under that of diseases of the lungs. Every other filing system of which we know makes a more or less arbitrary assignment in such a case to one position or the other, but we see no particular objection to the idea of filing a single diagnosis in more than one place. It makes a little more work in card writing, but it also simplifies the cataloger's work. The rule is: "In case of doubt as to whether a diagnosis belongs in one place or another, file it in both."

The same system of double-listing holds for complications. We enter a case under kidney-diseases as "chronic nephritis with coma," and under the nervous system, as "coma due to nephritis," and in the latter place will also be found "coma due to diabetes," "coma due to brain trauma," etc.*

* Since the above was written, Miss Clark, the hospital record-clerk, has introduced the method of using a certain number of "dummy-cards" in the catalog. This will save much labor, even though it is to be applied only in such diagnoses as are rather common. Thus, under "Tuberculosis, Lungs" in the Infectious Diseases will be found in full all names and hospital numbers with this diagnosis; but under "Lungs, Tuberculosis" (Respiratory System) will be found a "dummy-card" with the notation "See Infectious Diseases, Tuberculosis, Lungs". Thus we still preserve the advantage of the double-listing.

This system of grouping cases of similar nature has already proved a great convenience not only in certain statistical researches made in this hospital, but in preparing lists of patients who are to be asked to return for demonstration to students.

The next desideratum was felt to be flexibility,—that is, the system should be capable of later additions and alterations in the light of new knowledge. Every method which involves the use of numbers or other tokens in designating diagnoses is very ill-adapted to later alteration. We know of one hospital which embarked on a system of such a character years ago, and now finds that new diagnoses are often impossible to list, and that changing the system is prohibitive, since this would practically amount to copying every card for years back. For this reason numbers have not been used as a vital part of this scheme. A certain number of such tokens appear as guides to the eye, and for purposes of cross-reference from one section to another, and from the index; but these tokens are not used in the card catalog, and are likely to be changed with every new edition. As it stands, whole sections can be shifted if so desired, *e.g.*, all the syphilis cards may later be changed from the section of infectious diseases to that of animal parasites, if new knowledge seems to warrant it.

Finally, as to practicality: It is to be taken for granted that the maximum of value cannot be attained without some complication of the system. We expect always to have a trained cataloger to do the work of filing, and anticipate that, in addition, one member of the staff will necessarily continue to give a half-hour or so a week to looking through the histories. It may be said, however, that this scheme has been found satisfactory in this hospital in two years of use by catalogers who were not previously trained, and, although some doubts arise and mistakes are made, these are probably not more frequent than with any other system.

An integral part of the scheme, following the tabulations, will be a very full index, containing not only the terms as used in the classification, but all possible synonyms, and even many terms which are refused standing, with cross-reference to the section where the approved terminology may be found.

No full description of the classification can be attempted in this place. It will be observed that the first seven main divisions are on the basis of etiology, viz. Infections, Animal Parasites, Constitutional Diseases, Poisons, General and Traumatic Effects of External Agents, and New Growths. To these are added No Disease and No Diagnosis. The remaining fourteen headings represent anatomical systems, under which as subheads will be found the individual organs and tissues, and under these, again, the appropriate diagnoses. With few exceptions the various heads and subheads are arranged alphabeti-

cally, so that a diagnosis which is not given in the list can always be interpolated in its proper place. In this way we avoid the necessity for such a heading as "Unclassified."

I think that more than a word of apology is called for to justify the presentation of a new classification of this kind. The more one works with medical statistics, the more one is impressed with the great need for uniformity of nomenclature and classification throughout the country, or throughout the world. Examination of text-books of medicine shows that no two classify diseases by the same method, and often the same terms are used by two authors with widely different meanings.

Keenly as we felt the desirability of following some standard system, it seemed to us more and more evident that the optimum system had not yet been reached. The classifications which we considered most fully were the International List of the Causes of Death, the Bellevue Nomenclature, and those of the Massachusetts General Hospital, and Stanford University. Two of these have, it is true, been rather widely copied by hospitals throughout the country. At the same time we felt that none of them would do for us exactly the service we had in mind. For example, they would not allow, without modification, the entering of diagnoses in more than one place, a point which we considered of great advantage to the statistician. Also, none of them provided for the listing of subsidiary diagnoses to the extent which we wished, and none went far enough in the effort to correlate each lesion with its etiological basis.

In a general way we follow fairly closely the methods of the Bellevue and Massachusetts lists, only going farther in the same direction. Stanford has aimed at simplicity by furnishing only an alphabetical list of diagnoses without classification, with full cross reference to show the proper place for cataloging each term. The index of our system will give us much the same advantage, and we can still preserve those features mentioned above on which we lay so much value.

The justification of our wisdom in devising our own system will be in the way it works out, and in its reception by others. We believe the principle to be right, and hope that others will copy it. And if there are improvements to be made in it, we believe it will be found much more amenable to alteration and modification than the other schemes mentioned.

It should here be added that many other members of the Hospital Staff have generously cooperated, sometimes to the extent of drafting whole sections in which they were particularly interested. For the general plan the writer assumes the responsibility.

A few extracts from the system are here appended, to illustrate the general method.

Classification of Diseases for Use in the University of California Hospital.

(Sample Pages)

Main Divisions:

A. Infectious Diseases
B. Diseases due to Animal Parasites.
C. General Constitutional and Nutritional Disorders
D. Poisoning
E. General Results of External Agents
F. Traumatic Effects of External Agents.
G. New Growths
H. No Disease
I. No Diagnosis

I. Diseases of the Blood
II. Diseases of the Circulatory System
III. Diseases of the Digestive System
IV. Diseases of the Ductless Glands
V. Diseases of the Ear
VI. Diseases of the Eye
VII. Diseases of the Female Generative System
VIII. Diseases of the Locomotor System
IX. Diseases of the Lymphatic System
X. Diseases of the Male Generative System
XI. Diseases of the Nervous System
XII. Diseases of the Respiratory System
XIII. Diseases of the Skin and Appendages
XIV. Diseases of the Urinary System

A. INFECTIOUS DISEASES

(In every infectious disease, name all lesions found. In this list not all possible lesions can be given as subheads for each organism. In a few cases (Gonococcus, Pneumococcus, Syphilis, etc.) subheads are given in some detail. They may be used as examples for other infections where similar detail is not given. Avoid general diagnoses like Actinomycosis, Syphilis, etc., using these only when the disease is not localized.)

1. Actinomycosis
   - III.6 Liver
   - VIII.1 Bones
   - IX.2 Lymph-nodes
   - XII.4 Lungs
   - XIII. Skin and Subcutaneous Tissues
2. Anthrax
   - I. Septicaemia
   - XIII. Skin and Subcutaneous Tissues Malignant Pustule
3. Bacillus Aerogenes Capsulatus Infections
4. Bacillus Mucosus Capsulatus Infections (For subheads see Pneumococcus)
5. Blastomycosis (Name part involved and lesions)
6. Cholera, Asiatic
   - a. Carrier
7. Coccidioides Infections
8. Colon Bacillus Infections

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33. Rabies
   - a. Bite from rabid or suspected animal

34. Relapsing Fever
35. Rheumatic Fever Complex (In case organism is determined, list diagnoses under heading of this organism, with same subheads.)
    - II. 3.f Endocarditis
      - Active
      - Chronic Lesions resulting from
    - II. 5.a Pericarditis
      - Fibrinous
      - With Effusion
      - Fibrous
    - IV. 6.k Thyroiditis
    - VIII. 4.b.i Infectious Arthritis, Rheumatic
    - 5.j Myositis
    - XI. 1.h Chorea Minor
    - XII. 8.c Pleurisy
      - Fibrinous
      - With Effusion
    - XIII. Skin Lesions
36. Rocky Mountain Fever
37. Rubella
38. Scarlet Fever
    - a. Acute Nephritis
39. Sporotrichosis
40. Staphylococcus Infections
    - I. Septicemia
    - II. Circulatory System
      - 3. Heart
        - f. Endocarditis
      - 4. Mediastinum
        - a. Abscess
        - c. Mediastinitis
      - 5. Pericardium
        - a. Pericarditis
      - 7. Veins
        - b. Thrombophlebitis
    - III. Digestive System
      - 2. Peritoneum
        - m. Peritonitis
      - 6. Liver
        - a. Abscess
    - IV. Ductless Glands
    - V. Ear
      - 2. Auricle
        - d. Perichondritis
      - 4. External Meatus
        - e. Furuncle
        - f. Otitis Externa
      - 6. Mastoid
        - b. Mastoiditis
      - 7. Middle Ear
        - c. Otitis Media

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II. DISEASES OF THE CIRCULATORY SYSTEM.

3. Heart
   - a. *Adams-Stokes syndrome
   - b. *Angina Pectoris
   - c. Aneurysm of Heart
   - d. Congenital Heart Lesions (unspecified)
     - i. Defective Interventricular Septum
     - ii. Open Ductus Arteriosus
     - iii. Open Foramen Ovale
     - iv. Pulmonic Stenosis
   - e. Disorders of the Heart-beat
     - i. *Arrhythmia (unspecified)
     - ii. Auricular Flutter
     - iii. *Bradycardia
     - iv. Extrasystole
       - Auricular
       - Ventricular
     - v. *Fibrillation
       - Auricular
       - Ventricular
     - vi. *Heart-block
       - Complete
       - Incomplete
     - vii. *Pulsus Alternans
     - viii. Sinus Arrhythmia
     - ix. *Tachycardia
       - Paroxysmal
   - f. Endocarditis (Name Valves and Lesions, *e.g.*, Chronic Fibrous Endocarditis with Mitral Insufficiency)
     - i. Mural
     - ii. Valvular
       - a. Active Infectious
       - b. Chronic Fibrous
   - g. Fatty Heart
   - h. Gumma
   - i. Hypertrophy
     - i. Athlete's Heart
   - j. Hypertrophy and Dilatation
   - k. Myocarditis
     - i. Toxic (Cloudy Swelling)
     - ii. Acute Interstitial
     - iii. Chronic Interstitial
       - Affecting the Auriculo-ventricular Bundle
     - iv. Myocardial Insufficiency
   - l. Neurosis (unspecified)
   - m. Rupture
   - n. Thrombosis, Mural
   - o. Valvular Lesions (Specify if lesion is decompensated)
     - i. Aortic Insufficiency
     - ii. Aortic Stenosis
     - iii. Mitral Insufficiency
     - iv. Mitral Stenosis
     - v. Pulmonic Insufficiency
     - vi. Tricuspid Insufficiency
     - vii. Tricuspid Stenosis
     - viii. Aneurysm of Valve
   - p. Wound

*Use only as secondary diagnosis, giving cause of condition.

GUMMATOUS CERVICAL ADENITIS: ITS RELATION TO AND MISTAKEN DIAGNOSIS FOR TUBERCULOUS CERVICAL ADENITIS.*

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In all the vast amount of recent literature on syphilis, much of which pertains to the action of the recent remedies, salvarsan and neo-salvarsan, and the Wassermann technic, we find very little concerning syphilis of the cervical lymph glands. Gummatous cervical adenitis has been thought to be a comparatively rare manifestation, many syphilographers and those particularly interested in syphilis having seen but few cases. Where this form of tertiary manifestation occurs in cases obviously syphilitic, with other lesions or definite history, the condition is of interest; but the type which offers the greatest interest and difficulty of recognition is that which is the subject of this paper, that is gummatous cervical adenitis without other obvious signs of syphilis, mistaken in some cases and treated for tuberculous cervical adenitis, often over long periods of time without result. Several unusual and obscure cases of this nature I have been fortunate enough to recognize and study in the past few years and this has made a further study of the question of unusual interest.

A possible relation between tuberculosis and syphilis is well known to have occupied the attention of many students of both diseases for a considerable time; and we are constantly on the alert in cases of tuberculosis to prove or disprove a previous luetic infection. That numbers of cases of gummatous cervical adenitis are treated unrecognized as such, in the clinics and in private practice as well, is my belief; moreover, I do not think the condition is nearly as uncommon as has been supposed.

Mr. Jonathan Hutchinson[1] in his classic work on syphilis calls attention to the difficulty of making a definite diagnosis histologically between the two diseases in all cases. That the two processes may affect the cervical glands at the same time seems probable. Perhaps in such cases, where this is the only specific lesion recognized clinically, the gummatous process attacks glands previously tuberculous, perhaps small and latent, and is situated in such a location on this account; a "locus minoris resistentiae." That the converse of this is true at times must be admitted though it would seem less possible. Mr. Hutchinson's unique case was that of a "recurring chancre" or chancre redux; (tertiary lesion simulating chancre). It was excised and sent for examination; the pathologist reported typical tuberculosis except that no tubercle bacilli were found. The section was shown to several expert pathologists who all pronounced it typical tuberculosis. The primary lesion in this case antedated the gummatous inflammation by five years. The pathologist despite the history, adhered to his opinion of tuberculosis. Sir Jonathan said in his remarks on this most interesting case: "After all, in these cases perhaps the two agencies are at work together, and that a latent tuberculosis modifies a more recent syphilis." On this subject, which is of such direct importance to us in this paper, Dr. Macloed, quoted by Hutchinson, has this to say: "The differentiation by the microscope between the granulomata of syphilis and tuberculosis is always difficult and in some cases impossible; for example, in the syphilitic gummata where a histological architecture may be present which resembles that of a lupus nodule in every detail with the exception of the presence of the tubercle bacilli."

This brings the following case to mind, also bearing directly on our subject though in the same general way as illustrating the difficulty of differentiating the two conditions, gumma and tuberculosis. A testicle was excised and was examined histologically by three competent pathologists. One pronounced it tuberculosis; one, sarcoma, and one, syphilis. After a time the other testicle became enlarged in exactly a similar manner and was cured by iodide of potassium.

In regard to the question of syphilis and tuberculosis, Burzi[2] quotes Nicholas, Favre and Charlet. In 45 out of 46 cases of syphilis they obtained a positive tuberculin reaction (intradermal) though clinically no symptoms of tuberculosis were found in the patients beforehand. It will be seen that when the pathological examination is at times so equivocal and perplexing, that the clinical picture between gumma and tuberculosis may be even more so, and especially where the process is in the cervical lymph glands. A careful history taken with a view to both tuberculosis and syphilis (congenital as well as acquired), is most important in arriving at a correct diagnosis of the condition, in cases of chronic cervical adenitis of a type to lead us to suspect one of these two conditions or both. Hawes[3] has recently laid stress on the importance of a careful history in the cases of beginning tuberculosis and rightly laid stress on this over the physical examination. He urges that a history be taken with a view to syphilis in all cases. The history in cases where syphilis is suspected should be taken equally as carefully in cases of cervical adenitis. It is not enough to ask the common questions about miscarriages and stillborn children, but a more searching examination concerning collaterals and grandparents, if possible, should be obtained. It will often give precious information.

In passing now to a more special consideration of the subject we find, as stated previously,

* Read at the Pan-American Medical Congress, San Francisco, June, 1915.

that the literature on the subject of gummatous cervical adenitis is very scanty. A perusal of the *Index Medicus* from 1912 to 1913 and 1914 gave little information on this subject, though it is natural that some references may have escaped my attention. The most important, as well as interesting, communication on the subject is that of Wile[4], though the latter part of our title, "The Relationship of the Condition to Tuberculosis of the Cervical Lymph Glands," is not brought out. Wile found a strikingly small number of cases in the literature and comments on the fact, as there is such an affinity for the lymph glands in the earlier stages of the disease. Why the deep lymphatics—chest, mediastinal, etc.—should be frequently invaded and the cervical glands escape so constantly, is a fact which well merits speculation.

In Fournier's analysis of 3429 cases of various tertiary forms of syphilis there is not a single instance of gummatous cervical adenitis (Wile). He estimated that the total of recorded cases was well under 100.

Virchow divided the process of gummatous cervical adenitis into three stages as follows: (1) Stage of simple irritation, during which the intercellular substance maintains a gelatinous consistency; (2) A medullary stage during which there is active cell proliferation, puriform softening of the tumor mass and softening of the intercellular substance; (3) The state of caseation in which active cell proliferation becomes less marked but in which the main cell types are connective tissue and granulation cells.

A brief résumé of Wile's cases is of interest at this time in connection with my own to be recorded later. A boy of 19 years received his initial infection only five months before the manifestation which is of interest to us. The syphilis was severe. Five weeks after infection there was some swelling of the glands in the left side of the neck; a supraclavicular gland swelled to the size of a plum; the skin was red and there was fluctuation. Aspiration gave a few drops of sero-purulent material. A few typical spirochetes were found with a dark field illumination. The glands ruptured by a pin point opening which enlarged, and typical gummatous ulcers developed. Five-tenths gram of salvarsan was administered once with marked local and general improvement; the patient had been under mercury before (salicylate grs. .3) every fifth day. In two weeks two small glands (unruptured) had diminished until they were of normal size and of the two ulcers the smallest one had entirely healed. There was gain in weight and marked improvement in health. Wile does not state whether there was any reason for supposing that there was a latent tuberculosis of the cervical glands in this case. From experience it would seem as if this was a perfectly possible reason for the process attacking the glands as it did. The age of the patient is favorable to such a supposition.

The following cases have recently come under my observation, illustrating this condition, and the effect of syphilis on what were pathologically pronounced tuberculous cervical glands:

CASE 1. M. G., a girl of eight years, was seen at the surgical clinic of the Boston Dispensary in my service as assistant surgeon, service of Dr. H. M. Chase, to whom I am indebted for the case. Patient first seen October 13, 1914, referred from the Children's Department for enlarged tuberculous (?) cervical glands. They had been enlarged three months. The patient had been treated one year before in the Surgical Department expectantly with that diagnosis. The history was given by the mother at the time as follows: Only child, no miscarriages, mother and father well. History of an old previous endocarditis. Examination showed a fairly well developed and nourished little girl. The cervical glands under the right lower maxilla were enlarged, the skin reddened and fluctuant. A large mass under the maxilla was firmly fixed, the chief site of disturbance. There were no obvious signs of inherited syphilis. There was a similar process less extensive on the left side of the neck. The tonsils were enlarged and the teeth were poor, there was a history of nasal obstruction. Cultures taken in the throat department showed various organisms, mostly staphylococci and pneumococci. The tonsils and adenoids were removed in the Throat Department and, at the same sitting, the glands were thoroughly opened, curetted and swabbed with iodine and drained. The specimen of gland debris was sent to the pathologist, Dr. F. B. Mallory, who reported that the glandular tissue showed on microscopic examination a process more suggestive of gumma than of tuberculosis. The Wassermann reaction at this time was negative. The Von Pirquet was also negative. After the pathologist's report was received, I put the child on mixed treatment which was later changed to hydrarg. cum creta and iodide. Improvement in the general condition was striking, locally there was some improvement in the glands. From a listless, tired little girl she began to be alert and interested. The glands were curetted again and much debris removed, the child was then given three injections of .2 grm. neosalvarsan (Dermatological Department). The effect was almost magical. In a few weeks the swelling in the neck had almost disappeared and the sinuses healed. In February, 1915, the child was discharged well, with a soft, supple neck, without obviously disfiguring scars. Of much interest are the following facts in connection with this case, ascertained later. The correct family history was as follows (first history by mother unreliable): The first child was stillborn. The third child died at four months. Twins, the fifth pregnancy, were premature and stillborn. The father later confessed that he had suffered from syphilis some years before, *and had never been treated.*

CASE 2. A. N. was seen at the Surgical Clinic of the Boston Dispensary, Dr. H. F. Day's service, in April, 1915. The history was as follows: The father died of cancer, the mother is living and well. There were four children; one died of measles. The child has had measles and pertussis. In February, 1815, operated on at the Boston City Hospital for tuberculous cervical adenitis. A radical excision of the glands on the left side of the neck was done.

Pathological report: Tuberculosis of the cervical lymph glands. Very soon after the operation the wound broke down and sinuses formed in the neck. Examination showed a well developed and nourished little girl. Skin and mucous membranes of good color. A puckered four-inch scar from old tuberculous gland on left side of neck and an abscess, probably tuberculous, on right side of neck. Lungs and heart negative. The Von Pirquet was positive. There were no obvious signs of inherited syphilis found on examination. April 26, Wassermann was positive. The neck was very slow in healing. After three weeks of specific treatment there was considerable improvement in the neck and the sinuses were nearly healed. One large soft mass above the left clavicle remained. No neosalvarsan has been administered. Child still under treatment.

CASE 3. Mrs. L. P., 45 years, was seen at the Surgical Clinic of the Boston Dispensary April 1, 1915. The family history was as follows: Mother died of "rheumatism" and "stomach trouble," the father is living and well. There were 11 children in the family, five sisters and five brothers. Two brothers and two sisters living. Six children died in infancy and childhood, some "passed away suddenly without cause." Patient has one son living and well, 14 years of age. As a child she was never strong, constant headaches, "poor blood" and easily run down. Married at 30. Only the child mentioned, and no miscarriages. One year ago in April there were enlarged cervical glands, bilateral, and in August they broke down and were incised and drained. They have been broken down and discharged pus from sinuses and ulcerated surfaces ever since. The glands in the neck were operated upon six different times, but no radical operation was done. The patient has felt very poorly of late. The diagnosis had been one of tuberculous cervical adenitis. On March 9, a positive Wassermann was obtained and four injections were then given of neosalvarsan at short intervals. Result: great improvement in neck condition, discharge lessened, sinuses healed, and though there is still a slight amount of indurated tissue in the neck, there has been great improvement. This is an example of probable true gumma of the cervical glands mistaken for tuberculosis in a possible congenital syphilitic.

CASE 4. Mrs. C. H., 28 years, was seen at the Surgical Clinic of the Boston Dispensary, October 27, 1913. There was a history of glandular swelling on the left side of the neck for 14 years. For the last two years the swelling had been painful. There was never any redness or fluctuation and there had been no sinuses or discharge. Some points in the general history are of interest. The patient had sought relief for the condition of the neck at various hospitals and dispensaries and of private physicians for years without benefit. The husband was living and well. The patient's father was dead, cause not ascertained. The mother is living and has diabetes. She has a positive Wassermann reaction. The x-rays of the mother's tibiae show a marked periostitis, and a brother of the patient, the mother says, has syphilis. Examination showed a well developed and nourished young woman. Throat and nose clear, teeth good, no obvious cause for the enlarged glands found on physical examination. There was no venereal history. On the left side of the neck there is an irregularly prominent mass of hard discreet glands from filbert to walnut size, occupying the region immediately anterior and posterior to the sterno-mastoid, along its length, mostly in the lower and middle thirds of this space. The lower glands were the largest, just above the clavicle and slightly posterior. There was no other glandular enlargement found. Chest negative and abdomen negative. An x-ray of the chest showed numerous glands "peppered" well down to the diaphragm with some opacity about some of the glands. An x-ray of the tibiae showed a definite periostitis. The Wassermann reaction was negative. The child was examined and showed no obvious signs of inherited disease. On November 5 the patient was put on intensive specific treatment, mercurial inunctions and iodide. The effect was striking. After three weeks, the glands were softer and smaller and the neck could be moved better. The patient's general health which had not been good was greatly improved. By January the glands were nearly gone, only one of large size remaining. In April, 1914, I excised one of the small glands for diagnosis under local anesthesia. The pathologist reported typical tuberculosis of a cervical lymph node. A short time after the operation the incision broke down *without suppuration*, the wound taking on a typically gummatous character, which healed promptly with a good scar under mercurial ointment locally. In January, 1915, the patient was seen again. The glands could hardly be felt and there was no discomfort or pain. The neck was soft. General condition good. There is a small sessile growth projecting down from the left side of the soft palate. Patient refuses its excision.

Fasal,[5] quoted by Wile, says that the topography of the gummatous adenopathies seems to be dependent on the occurrence of the earlier cutaneous and mucous membrane lesions. This would seem plausible if we accept the modern view of spirochetal permeation.

Up to 1912 only two cases of this condition were reported in the American literature. Most of the cases reported were those occurring at the same time as other tertiary lesions. Wile says that, in his opinion, in the state of our knowledge of the different granulomata's reactions to mercury and iodide, great caution must be exercised in making a positive diagnosis of syphilis on the clinical signs of improvement, without other data and examinations to judge by. We must also bear in mind the opinion of Macleod stated earlier in the paper, and that of Nicholas, Favre and Charlet concerning the extreme difficulty and at times impossibility of arriving at a correct diagnosis microscopically, between syphilis and tuberculosis.

Cases of cervical adenitis supposed to be tuberculous, yet not quite characteristic, should be regarded as possibly gummatous, and careful study with all the means at our command should be made to prove or disprove this supposition definitely. It has been proved that, after all, the clinician must fall back on consideration of the *case* with an exhaustive history pertaining to possible syphilis, to arrive at a correct diagnosis.

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LOCAL ANESTHESIA IN THE RADICAL CURE OF HERNIA.

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[From the First Surgical Service, Boston City Hospital.]

DURING the past few years, under the leadership of Braun of Zwickau, the use of local anesthesia has been popularized and its field broadened. In a tentative way the method has been applied in the German clinics to practically every operation listed in the text-books. As a consequence, there has been a definite reawakening of interest in the subject in this country, an interest which has lain dormant since the brilliant work of Corning, Crile, Matas and Cushing, which followed close upon the introduction of cocaine in the eighties.

As a result of experimentation and of recorded experience, the practical applications, and the limitations of the method as well, can now be rather definitely stated. Certain fields exist where general anesthesia will still be preferred, for instance, the peritoneal cavity and the brain; not that local anesthesia cannot be and has not been successfully employed in these regions, but that the advantages of the method are on the whole overbalanced by the complexity of the technic, the uncertainty of the results, and the strain on the patient.

One field in which local anesthesia may be employed with considerable satisfaction, according to my experience, is in the operative treatment of inguinal hernia. It has recently happened that within one week three patients with inguinal hernia, in whom general anesthesia was contra-indicated, came under my care, the hernia being recurrent in two instances. Briefly summarized, their histories are as follows:

CASE 1. W. H. D., 62, no occupation, entered the Boston City Hospital July 15, 1915. Has had a massive right inguinal hernia for 14 years, during which period has worn a truss constantly. Lately pain has been troublesome. Desires operation on account of pain.

Obese. Blind from infection following injury. Crackling râles at left base. Heart enlarged outward, with loud musical systolic murmur transmitted to axilla. Urine shows renal elements.

Local: Easily reducible right inguinal hernia size of hen's egg when recumbent. Large fat pad, with calloused skin over area size of palm.

Operation, under local anesthesia, July 17. Four inch skin incision. Aponeurosis divided over canal, and freed back. Margin of conjoined tendon and Poupart's ligament developed ready for suture. Sac found and dissected free without disturbing cord. Ring takes three fingers. Sac sewed off, stump transplanted under transversalis and internal oblique. Conjoined tendon sewn to Poupart's over cord with four mattress sutures of kangaroo. External oblique closed with interrupted sutures of 1 chromic. Fat layer carefully approximated with same. Subcuticular silkworm-gut. Cunningham swathe.

Temperature was normal during entire stay in hospital. Patient suffered no discomfort and convalescence was uneventful. On August 2 head-rest was allowed, and patient was discharged August 6, with wound solid and no bulging on cough.

CASE 2. Walter C., grocer, 47, entered the Boston City Hospital July 19, 1915. Was operated in this hospital for appendicitis with peritonitis 10 years ago. Developed hernia in scar, which was repaired two years later. Had second attack of appendicitis, reoperated three years later. "Chronic bronchitis" for years. Has had hernia in scar for seven or eight months, made worse by nagging cough. In this period it has been incarcerated twice, but each time reduced by physician. Is planning to go south in the early fall, and desires operation on account of danger of strangulation.

Poorly nourished. Signs of quiescent phthisis at right apex. Heart sounds distant and of poor quality.

Local: Wide bulging scar, impulse on cough.

Day after entrance, while walking down ward, collapsed. Seen in consultation by Dr. Robey, who found nothing to contra-indicate operation under local anesthesia, which was undertaken.

July 22, ellipse including scar excised, and much subcutaneous scar tissue dissected away. Aponeurosis of external oblique recognized, and freed from scar mass. Poupart's ligament developed, as well as edge of conjoined tendon. Small sac tied off without disturbing cord. Four mattress sutures of kangaroo tendon placed. Closure as in preceding case.

Convalescence agreeable and uneventful except that on fourth day patient had a coughing spell with rise in pulse and temperature, "like attacks I used to have," which subsided in a few hours. Otherwise pulse and temperature normal. Head-rest August 10. Discharged August 13, with wound healed and no impulse to cough.

CASE 3. F. A. P., lawyer, 79, entered the Boston City Hospital July 21, 1915. Always well. Nine years ago operated for left inguinal hernia in this hospital. Two years ago right side operated by private surgeon for similar condition. One year ago attack of "cerebral hemorrhage," unconscious for one week. Comes in for recurrence of hernia on right. Painful. Cannot wear a truss. Earnestly desires an operation.

Senile, but well preserved and mentally acute.

General physical: Negative except for heart which is irregular in action, with presystolic murmur at base. Pulse high tension. Urine shows renal elements.

Local: bulging in scar in right groin.

Operation under local anesthesia, July 23. Scar excised. Fascial planes developed. Lower half of former repair found to be holding beneath cord. No sac found, but merely wide bulge of peritoneum of upper half. Conjoined tendon sewed over cord in Pourpart's in upper half of wound with mattress stitches of kangaroo tendon. Closure as in preceding cases.

Convalescence agreeable and uneventful. Head-rest August 10, up in chair two days later, and discharged August 14. Wound healed. No bulging on cough.

TECHNIQUE.

In the first patient a preliminary hypodermic injection of morphine-atropine was administered as a routine measure before my order to the contrary had been transmitted. The other two cases had no sedative before operation, and required none. In none of the cases was an opiate required at any time after operation.

With the instrument kit there was boiled up a glass jar of 150 c. c. capacity, to hold the anesthetic solution. Two syringes were put in a glass slip-joint syringe of the Lüer type, holding 5 c. c., with two ordinary small hypodermic needles, and a slip-joint Record syringe holding 20 c. c., with two needles of larger diameter 2½ inches long, having rather obtuse points.

The solution used was half per cent. novocaine, made up in distilled water, and previously sterilized for 20 minutes in the autoclave. One hundred cubic centimeters of this solution were poured into the sterile jar, and 10 drops of 1-1000 adrenalin added. This solution can be used freely, it having been found that more than 250 c. c. can be injected without toxic effect. Actually, in this small series, the amount employed averaged a little over 50 c. c. per patient. For operative purposes it may be said that cocaine has been entirely discarded for this derivative, which has the advantages of comparative non-toxicity and sterilizability.

Everything was made ready in the operating room before the patient was wheeled in on the table. The skin preparation (benzine-iodine-Harrington's alcohol) was done without fuss, and the patient draped. The eyes were not covered. When it can be done conveniently it may be better to prepare and drape the patient before bringing him in.

Immediately, using the Lüer syringe, the line of incision was injected by the endermic method of successive wheals. In the two recurrent cases a wide ellipse was outlined, to include the scar. No preliminary freezing of the skin was employed. If consideration is used in making the first injection, the others can be made rapidly and without pain, and a small syringeful used endermically will go a long way.

Braun has given up the method of anesthetizing the skin first, on the ground that it is unnecessary. He makes one wheal only, for the passage of the long needle, through which he injects the subcutaneous tissue along the line of incision. But to completely anesthetize the skin by this indirect 'conduction' method requires a considerable quantity of solution, penetrating to some distance on either side of the proposed line, and necessitates a certain wait for its accomplishment. I believe it to be true that if the line of incision is first injected endermically, the surface anesthesia will be more assured, much less solution will be required in the subcutaneous tissue, as a consequence of which there will be less distortion of the field, and the incision can be started without waiting as soon as the injection is completed.

The skin injection done, the long needle of the Record syringe was introduced through the upper end of the line of wheals and passed downward its entire length in the subcutaneous tissue, and while being withdrawn, a small amount of solution was introduced. Then without withdrawing it from the skin puncture, it was reintroduced at a deeper level several times at varying angles along and to either side of the canal. The bluntness of the needle was a safeguard against perforation of vessels, vas or peritoneum. The syringe was then refilled, and a puncture made at the lower end of the incision, and the cord and the region of the external ring similarly infiltrated. In the two cases of recurrent hernia the punctures were made not at the upper and lower ends of the incision line, but at the middle of the two lines forming the ellipse.

This having been expeditiously accomplished, it was found that the skin was insensitive, and at once ready for incision. The operative technique was that which seemed indicated by the condition found. The dissection, which had to be quite extensive in the recurrent cases, was done almost entirely by the blunt method, using the unopened dissecting scissors,—a procedure which was distinctly favored by the tissues being ballooned with fluid. Gentleness was used in all necessary manipulations, unnecessary instruments were kept out of the wound, and retraction was done largely with the fingers. There was practically no hemorrhage, owing partly, no doubt, to the fact that the vessels were avoided by the method of blunt dissection employed. The few bleeders met with were seized with mosquito snaps and tied off at once with fine catgut.

The first injection usually sufficed to carry us down to the cord and the peritoneal sac without any evidence of discomfort. A few cubic centimetres injected here, the amount depending on the manipulation necessary in the individual case, effectually controlled any sensitiveness. The deep stitches were placed well into Poupart's ligament without causing pain, and in closing up, no further injections were required.

The operative time averaged 50 minutes from the first injection to the completion of the subcuticular closing stitch. The patients went back to the ward in good humor, somewhat tired

from the restraint of maintaining the one position on a hard table, but ready for a lunch, and expressing satisfaction at the simplicity and painlessness of the procedure. Being men of some intelligence, and having each been operated on before, they were in a position to make comparisons.

CONCLUSIONS.

Novocaine offers a simple and satisfactory means of inducing anesthesia for the radical cure of inguinal hernia, even in complicated cases. The technic adds something in the way of difficulty to the surgeon who is not accustomed to the use of local anesthesia, but the advantages to the patient are sufficient to compensate for any extra care or effort required. It should be the method of choice in cases where contra-indications to general anesthesia exist, and it should be used in any ordinary case if the patient desires it.

Clinical Department.

STUDIES IN SPEECH DISORDER.

No. 4.*

ELIMINATION OF VOICE DEFECTS FOLLOWING ADENOID AND TONSIL OPERATIONS.

BY WALTER B. SWIFT, M.D., BOSTON,

In Charge of Voice Clinic, Boston State Hospital, Psychopathic Department, Boston.

BEFORE indicating the treatment sometimes necessary to perfect vocal expression after adenoid and tonsil operations, it will be *à propos* to say a word about tonsil overgrowth, adenoid obstruction, and the sounds thereby made impossible of production; that one may see just how vocal faults of articulation arise, how they become fixed habits, and how the vocal expert is needed to round out again and perfect the previously normal vocal execution.

The group of glands known as the adenoids, tonsils and the lingual tonsil form what laryngologists term the tonsillar ring. The adenoids are located above the uvula, and their overgrowth obstructs the passage of air into the nares. It naturally follows that when obstruction is complete, nasal breathing becomes impossible and any vocal utterances that require an open nasal passage for their production are no longer possible of execution. This vocal failure of execution may be of two forms, depending upon whether the patient's obstruction came before or after the learning of those utterances that require the open nares. If the obstructing growth occurs before articulation has become set in its execution in the mind and the expressing mechanism, then, as long as the obstruction lasts, there can be neither memory nor experience of the proper vocal expression. If, on the other hand, the occluding obstruction has started its growth later in life, after vocal execution has become ingrained in its memory and vocal mechanism of execution, then during the obstructive period there still lasts, though becoming more or less dim as time passes, a memory for those previously executed vocal elements. The throat specialist sees the material obstruction, less worthy of note to him is the vocal occlusion; he weighs the dangers of the consequent mouth breathing as a means of receiving infection; he sees the general constitutional effects,—anemia, stunted growth, perhaps malnutrition; and, if the case has been of long duration, the retardation in the studies of the school, play a considerable part in leading the laryngologist to recommend operation. Not long ago a complete recovery from all the above-mentioned symptoms was promised, and often in glowing terms, but of late years experience has led the throat men to be more conservative. They have found that even after operation one or more of the above symptoms may persist, and among the most frequent are the mental backwardness and the faulty vocal execution.

Then diet, fresh air and exercise are recommended, which, of course, fail to reach the seat of the trouble, and these mental and vocal sides of the situation persist too often untreated thereafter.

What, then, are the vocal defects that persist after adenoid and tonsil operations; how shall their elimination be effected, and who is fitted to engineer that elimination?

The vocal defects resulting from nasal or laryngeal obstruction gather about the execution of "m," "n," "ng" and "k" and "g," and some of the vowels are changed slightly. The vocal execution of a normal "m" and "n" require closed lips, free buccal cavity and open nares. The normal "ng' requires closed lips, closed buccal cavity and open nares. Manifestly then, when the nose is blocked the sounds of these executions change, and this change is what is known as nasality.

With "k" and "g" the situation is slightly different. These sounds are made thus: "k" by an air explosion made when a closed larynx is suddenly opened by lowering the back of the tongue: "g" by the same technic as for "k," with the simple addition of vibration in the vocal cords. When tonsils and adenoids occlude these passages, "k" and "g," a nasal element is added to their usual sounds, not, however, quite so marked as when "m" and "n" are involved, but enough so to call it an approach to nasality.

Thus with overgrowths in these resonant chambers the patient is forced into enunciations that persist as long as the occlusions persist, and

* No. 3, see BOSTON MED. AND SURG. JOUR., Nov. 11, 1915.

this explains why they frequently continue after operations. The reason is because either never having learned the proper articulation or being so long forced into a faulty one, these continue on beyond the period when the obstructing tissue is removed.

From the above cases one sees there is quite a variety of defect that accompanies and follows the tonsil and adenoid hypertrophy. The treatment varies much with every case. Even some with the same defects have to be approached differently from others because of their different dispositions, and others differently merely because their ages differ. Otherwise it consists in reteaching vocal expression through imitation and didactic instruction, varying according to age and disposition. Much more than this it is difficult to put into the printed word, as it is more or less a matter of sound production and sound imitation, which obviously must be heard and cannot be printed. However, it sometimes takes a good study to determine by sound just what the present faults of utterance are, and still more ingenuity to instil the proper execution.

Summary. Operations for adenoids and tonsils often fail to relieve habits of faulty articulation and consequent school retardation. Vocal drill by one trained scientifically in speech disorder is the surest method to secure speedy permanent relief, in that perfect articulation that makes possible an easy enjoyable conversation.

Book Reviews.

Modern Medicine. Its Theory and Practice. Edited by Sir William Osler, Bart., M.D., F.R.S.; and Thomas McCrae, M.D. Vol. V, Diseases of the Nervous System—Diseases of the Locomotor System. Second edition, thoroughly revised. Philadelphia and New York: Lea and Febiger. 1915.

The fifth and last volume of this well known system has just appeared in its second edition. The contributors are essentially the same as in the first edition. The larger part of the volume, some eight hundred and seventy pages, is devoted to the discussion of diseases of the nervous system—some eighty pages suffice for the discussion of the various diseases of the locomotor system that have not been treated elsewhere. Dr. Harvey Cushing contributes an admirable chapter on "tumors of the brain and meninges" and another one on "hydrocephalus." Dr. Bernard Sachs has an excellent discussion of "syphilitic disease of the central nervous system." It is needless to say that all the contributions bear the stamp of authority. The revised second edition of the fifth volume completes what is probably the best system of modern medicine in the English language.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. J. Graham Brown, M.D., and James Ritchie, M.D. Vol. xiii. Edinburgh: Oliver and Boyd. 1915.

This volume continues the valuable series of reports of researches from the laboratory of the Royal College of Physicians at Edinburgh, and represents the contributions of workers made during the years 1913 and 1914. In the preface acknowledgment is given of the generous financial support received by the laboratory from the Carnegie Trust for the Universities of Scotland. The volume consists of a series of thirty-two articles by eighteen authors, reprinted from various medical journals. These papers are grouped under the headings of protozoölogy, anatomy, biological chemistry, pathology and bacteriology. Particularly to be noted are the contributions by Meiklejohn on the topography of the intracardiac ganglia and on the innervation of the nodal tissue of the mammalian heart. The volume is abundantly illustrated. Particular attention should be called to the series of thirty cuts representing Fraser's and Dickie's reconstruction model of the middle and inner ears. The volume, like those of the Rockefeller Institute for Medical Research, is an important medical contribution to the advancement of science.

Some American Medical Botanists Commemorated in Our Botanical Nomenclature. By Howard A. Kelly, M.D., LL.D. Delivered as a lecture before the Medical Historical Society of Chicago, 1910, and before the University of Nebraska, Oct. 16, 1913. Illustrated. Troy, N.Y.: The Southworth Company, 1914.

This book contains the subject matter utilized for lecture purposes by the author, himself a medical botanist of no mean calibre. All such efforts to awaken the interest of the busy practitioner in outside subjects are praiseworthy, particularly when they contain, as this book does in high degree, useful information carefully gathered and presented in readable fashion. Starting out with the life work of those physicians for whom flowers have been named, as the gardenia, wistaria and claytonia, the author gradually included thirty excellent and adequately illustrated biographies.

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THE MIDWIFE VERSUS THE PREGNANCY CLINIC.

As leading articles in this issue of the JOURNAL we are glad to present two papers on the midwife problem by two Boston physicians, representing two radically different modes of regarding and undertaking the solution of this important question. The first article, by Dr. A. K. Paine, reaches the conclusion that in view of the obvious deficiencies of training in obstetrics in this country, the best method of meeting the needs of the situation is to adopt the midwife system of Europe, placing it, however, under suitable regulation and providing adequate training for those who are to undertake this work. The second article, by Dr. James Lincoln Huntington, on the other hand, after pointing out the inherent evils of the midwife and the undesirability and impracticability of such training, describes the work of a well-equipped pregnancy clinic, contrasting the merits of such a system, in conjunction with a lying-in hospital, with the disadvantages of the midwife method.

The midwife problem has been amply discussed in previous issues of the JOURNAL, both editorially and by authors of original articles on this subject. In the light of the argument presented by the two new papers under consideration, we see no reason to modify the attitude hitherto taken by the JOURNAL in condemnation of the midwife and in approbation of the pregnancy clinic system. On the contrary, it seems that the results already demonstrated in the work of the pregnancy clinics at the Boston Lying-in Hospital, at the Maverick Dispensary, and at the Peter Bent Brigham Hospital, to mention some of those in this city alone, demonstrate the superiority of an organized system of pregnancy supervision and out-patient care by competent young physicians and medical students under the supervision of a lying-in hospital staff. The education and regulation of midwives is a difficult and expensive matter. If adequately carried out, it involves not only a greater burden on the community, but the maintenance of a pernicious dual standard of obstetric competence. If not efficiently carried out, or if not carried out at all, it leaves the untrained, or ill-trained midwife as a perpetual menace.

The difficulties of maintaining and administering an efficient midwife system are illustrated by the experience of European communities where this has been attempted. The experience of Scotland, a large number of whose leading physicians have recently petitioned for the passage of a midwife bill for that country, can hardly be cited as an instance in point, since the circumstances of war now prevailing in that country, whereby a large number of medical practitioners have been called to the front, are not to be compared with those obtaining in a country like our own, or indeed, in any peaceful community in which the medical and nursing professions are abundantly filled.

The evils of the midwife system are recognized not only by the profession, but by many among the laity. In a recent issue of the *Chicago Tribune* there appeared an editorial comment on the midwife question, which summarizes in part as follows the comparative obstetric situation in Europe and in the United States:

"The midwife is a product of the Old World, and it is among recent arrivals from Europe that

she plies her trade in Chicago. While there was, and still may be, room for the limited experience and the imperfect knowledge of the midwife in the peasant communities of Russia, Poland, or Galicia, there should be no room for a midwife in Chicago. In the peasant communities of the Old World one has to travel frequently twenty-five or thirty miles to obtain the services of a physician. To make such a journey by wagon—and railways are scarce in such regions—often may mean death to the patient. There the crude obstetric knowledge and experience of a midwife may save a life.

"In Chicago, where the patient is separated from the physician by the space of but a street car ride or an automobile run, the ministration of a midwife cannot be excused on the grounds of expediency. Her experience counts for naught in comparison with the physician's training. The most intelligent of midwives knows next to nothing about anatomy. No matter how clean she keeps herself she is ignorant of the laws of asepsis. She is useless or worse in the sickroom. Where the patient's condition is precarious the midwife is herself compelled to call a physician in order to save her own neck. Where, on the other hand, the condition of the patient is normal, the ministrations of the midwife carry with them at all times a menace of infection.

"The argument in favor of midwives is that they are economical, that they are used in families who cannot afford a doctor. That is no argument. Such cases should be provided for at hospitals and dispensaries. Another defense of the midwife is based on the ground that some women will submit only to the ministrations of a woman. But this defense, likewise, does not hold water. There are plenty of excellent women physicians in this city that can be called in just such cases.

"A ban upon midwives will result in hardships upon a number of individuals, who are now finding midwifery a profitable occupation. But the suppression of the irresponsible practice of medicine and obstetrics by ignorant women will do incalculable good to the community at large."

This editorial is of additional significance, coming as it does from the American city which has the highest percentage of midwide attendants. According to a recent report of Dr. Henry G. Ohls of the Chicago Health Department, there are in that city about 500 midwives who attend over 43½% of all births occurring in that city. In New York City there are 1300 midwives who attend 40% of the births. In Pittsburgh, 31% of the births are attended by midwives and in Philadelphia 21%.

In conclusion, it seems that while, under the conditions of life in many European and Asiatic communities, the midwife is, perhaps, an inevitable evil, her existence is inconsistent with the methods and ideals of civilization and of medical science in this country. This was the conclusion also reached at the recent conference on infant mortality at Philadelphia, noted in another column of this issue of the JOURNAL. That the midwife system has been introduced chiefly as a result of our large alien immigration is a misfortune; that it should be permitted to continue, or to be extended among our native communities seems not only undesirable, but a menace to the ultimate higher development of our civilization and science. It is not to be expected that the midwife system as it now exists should be abrogated unless it is to be replaced by a system in every way superior and preferable. As such a substitute, the pregnancy clinic system coordinated with a lying-in hospital seems wholly superior to a system involving the recognition, training and registration of the midwife as a permanent factor in the medical practice of this country. The midwife in America is an anachronism and an anomaly, and should not be tolerated, but eliminated as speedily as an adequate and efficient substitute system can be developed for the obstetric care of all classes of the community.

AN IMPORTANT PUBLIC HEALTH SERVICE.

IN last week's issue of the JOURNAL we noted the appointment of Dr. Haven Emerson to succeed Dr. S. S. Goldwater as commissioner of health of New York. The retirement of Dr. Goldwater from this important position marks the conclusion of a very valuable and notable service in the cause of public health. Although this service has lasted less than two years, there have been made during this brief time important advances in the activities, administrative methods and scope of purpose of the department. Dr. Goldwater accepted this position at great personal sacrifice, and, in relinquishing it to return to his duties as director of the Mt. Sinai Hospital, carries not only the gratitude and admiration of the community which he has served, but the appreciation of the medical profession for the nature of that service.

A recent issue of the *New York Evening Post* has expressed effectively the intelligent public opinion of Dr. Goldwater's work and of his methods in accomplishing it.

"The energy which Dr. Goldwater has put into his conduct of the Health Department, an energy which has seemed inexhaustible, has been manifested in two distinct ways, and it is difficult to say in which of the two it has been more remarkable. While the public has been hearing, at brief intervals throughout his incumbency, of extension after extension in the scope of the department's activities, it has had fully as much reason to be impressed with the unyielding vigor that he has put into the enforcement of the health laws and of the orders of the department. On the first head, a glance at the summaries of the department's activities issued at the close of last year, and at the close of the first half of the present year, is sufficient to remind us how much has been done. We can name but a very few examples, out of a large number. There have been established a Bureau of Public Health Education, a Division of Industrial Hygiene, a self-supported system of meat inspection—the cost being met by the assessment of firms selling the goods. We all remember the energetic sally of the department into a new field when it undertook to put a stop to avoidable over-crowding in the subways and on surface cars. The inspection of dairy farms had previously been left to the milk commissions of the various county medical societies; the department, feeling that it was responsible to the city for the safety of the entire milk supply, has instituted periodical examinations of these farms and their products. These, as we have said, are but a few samples of the extension of the department's work; and it ought to be added that, so far as we have noticed, every one of the multitude of extensions has been accomplished, not by the use of additional money, but by such effective improvement of organization as to make the new work possible without increase of expense.

"Of even greater interest than the undertaking of new work is the vigor, intelligence, and determination which have evidently been put into every feature of the department's activities. Any one who regularly sees the weekly bulletins of the department must be struck with the live character of their contents. They are full of interest, and cannot fail to be of great practical utility; especially now that the number issued has been increased to twelve thousand, so that they are sent regularly to every practicing physician in the city. The vigor and success with which the campaign of the department against patent medicine evils has been carried on during the past few months is perhaps the most recent reminder of the spirit in which it is doing its work. And all along the line, it has come to be known that when the Health Department says a thing it means it, and that its force is so well organized as to enable it actually to do what it either promises or threatens."

On November 6, at the conclusion of Dr. Goldwater's term of office, a testimonial dinner to him was given by officials of the Health Department of New York City. Among the speakers who expressed their appreciation of the work of Dr. Goldwater as Commissioner of Health were Commissioner Emerson, Dr. Charles F. Bolduan, Dr. Matthias Nicoll, Jr., Assistant Corporation Counsel William J. Millard, Dr. Charles B. Slade, Dr. William H. Park, Dr. S. Josephine Baker, Dr. Robert J. Wilson, Dr. L. I. Harris, and Mr. Ole Salthe. Dr. Goldwater, in response, outlined his conception of the work of a modern health department as one which, more than ever, would serve for the maintenance of good health rather than temporize with attempts to cure ill health.

A service such as Dr. Goldwater's, though brief, is of importance in the history of the development of public hygiene and of preventive medicine in this country, since it contributes to the establishment, not only of administrative methods, but of a standard of achievement, purpose, and progress, that will be of value to the future, as it has been of benefit in the past and present.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS IN OCTOBER, 1915.

THERE has been an increase in the number of cases of communicable diseases in Massachusetts for the month of October. This increase is an annual event. It is always coincident with the opening of the public schools. In comparison with the same month last year, the total of communicable diseases reported to the boards of health shows considerable increase. An analysis of the reports shows that the greater prevalence of whooping-cough in various parts of the state is largely responsible for this increase.

Whooping cough has been prevalent in many parts of the state. The difficulty of early diagnosis and efficient quarantine in this disease is largely responsible for its continued spread. Some practical work is being done by the New York City Department of Health as to the use of a vaccine for this disease. Results of their studies will, no doubt, soon give out some important facts to help us in our control of this infection. While there have been no epidemics in any particular city or town, in a few places it has been particularly prevalent. Among those places may be mentioned Cambridge, Province-

town, Chelsea, Lawrence, Waltham, Natick, Northampton and Whately. Springfield has been having a considerable number of cases for several months, but they seem to be decreasing.

The diphtheria situation is of interest. A comparison with October, 1914, shows that there are about the same number of cases this year. One fact, worthy of note, is that they do not seem to be so fatal this year. The fatality rate last year was 6.7 and this year 3.8. While this is gratifying, yet it is no insurance that the infection may not become virulent at any time. There have been no marked epidemics of diphtheria during the month. However, the disease has been particularly prevalent in the following cities and towns: Attleborough, New Bedford, Haverhill, Malden, Rockport, Saugus, Lawrence, Lowell, Waltham, Fitchburg, Hudson, Leominster, Shirley and Agawam.

The spread of diphtheria seems to be definitely along certain lines. The comment by one of the District Health Officers in reporting a diphtheria investigation seems to apply almost generally to the state. He says, "This outbreak shows the usual cycle of unrecognized cases with the physician called late, the extension of the disease by contact with others in the immediate neighborhood, and the spread of the disease in the school." An analysis of the reports coming to the department show that this seems to be true in almost all of the considerable outbreaks reported. The common practice of closing the schools is not so effective as keeping them open, when adequate medical inspection of the schools can be made daily. Our more exact knowledge of the disease and more scientific use of the culture method, plus the application of the Schick test, should enable us to work out a more efficient procedure in controlling this disease.

The typhoid fever situation continues to be favorable. As usual, there is some increase over September. In this disease the fatality seems to be slightly higher than for the same month last year. The following cities and towns have had more typhoid fever than usual: Pittsfield, Somerville, Lexington, Quincy, Bridgewater, Northbridge, Chelsea and Lowell.

Two particular foci are of interest. Northbridge has had an epidemic of 18 cases, in which the result of the investigation seems to point to the milk supply of one man. However, in this outbreak, there is a possibility of water-borne infection. For fire purposes polluted water is used in the domestic water supply.

Mansfield continues to have some cases of typhoid fever. The beginning of the prevalence of typhoid fever in this town dates back about two years. As in the former epidemic, the mode of transmission is probably milk. The evidence seems to point to the infection coming from a carrier of 45 years' standing.

MEDICAL NOTES.

American Association for Study and Prevention of Infant Mortality.—The sixth annual meeting of the American Association for Study and Prevention of Infant Mortality was held at the Bellevue-Stratford Hotel in Philadelphia Nov. 10, 11, and 12, under the presidency of Mr. Homer Folks of New York. Among those present from New England were: Mrs. William Lowell Putnam of Boston, Prof. John L. Morse, Drs. Richard M. Smith and J. Herbert Young of the Department of Pediatrics in the Harvard Medical School. Mr. George Bedinger and Mr. Charles Mason represented with Dr. Young the Boston Milk and Baby Hygiene Association. Dr. Buckingham of Boston, Dr. A. B. Emmons, 2nd, of Boston, Dr. J. L. Huntington of Boston, Dr. Harold J. Everett of Portland, Me., and Mr. Richard Borden of Fall River, were also in attendance.

In the section of Obstetrics papers were read as follows: "The Education, Licensing, and Supervision of the Midwife," by Dr. J. Clifton Edgar of New York; "Is the Midwife a Necessity?" by Dr. J. M. Baldy, of Philadelphia; "Progress Toward Ideal Obstetrics," by Dr. Joseph B. DeLee of Chicago. These authors all agreed on one point, namely, that all efforts should tend toward the eventual elimination of the midwife.

At the conclusion of the meeting very radical resolutions were introduced, aiming towards the recognition of the midwife by legislative means. This was referred without discussion to the Committee on Resolutions to report back to the Executive Committee of the Association at its next meeting in January, 1916.

National Medical Examination Day.—In a plea for every man and woman in the United States of adult age to join in a movement for annual or other periodic medical examination of themselves, which will be initiated on December 8, the National Association for the Study and Prevention of Tuberculosis presents figures in a Bulletin issued recently which show that practically 100% of the supposedly well people of the United States over 30 years of age have some physical defect or impairment. About 70% of these impairments are of a more or less serious nature. There are besides about 30% of defects of a minor character.

The figures which the National Association

presents are based upon the careful studies recently made by the Life Extension Institute among two highly specialized groups of people, the first group consisting of workers in the Ford Motor Company of Detroit, and the second group consisting of employees of commercial houses, banks and trust companies in New York. The records of these examinations show that practically none of those examined,—men and women—are normal in the strict sense of the word. Another striking fact in the examination is that only 10% of those who were impaired were aware that there was anything the matter with them. This fact alone, the National Tuberculosis Association points out, is sufficient to make every man and woman in the United States give careful consideration to the necessity for at least one physical inventory of the entire body a year.

The largest group of more or less serious impairments discovered were those showing sugar, albumen or casts in the urine. More than 45% of the above-mentioned groups showed defects of this nature. In the same groups about 23% showed abnormal blood pressure, while nearly 27% showed combined disturbances of circulation and kidneys. Organic heart disease, thickened arteries, lung trouble leading to possible tuberculosis, nervous affections, digestive troubles and venereal disease were among the other impairments discovered, practically all of which had escaped the notice of the individuals examined.

During Tuberculosis Week, which will be celebrated throughout the United States from December 6 to December 12, a national medical examination day will be observed on December 8. Groups and individuals will be urged to make arrangements for physical examination on that day. A circular describing in detail how the advantages of medical examination day may be obtained and indicating certain physical impairments which everyone should look for, will be sent on request from the office of The National Association for the Study and Prevention of Tuberculosis, 105 East 22nd Street, New York City.

PREVALENCE OF MALARIA, MENINGITIS, PELLAGRA, POLIOMYELITIS, SMALLPOX AND TYPHOID FEVER.—The weekly report of the United States Public Health Service for October 29 states that during the month of September, 1915, there were in Virginia 2665 cases of malaria, 21 of cerebrospinal meningitis, 64 of pellagra, 17 of poliomyelitis, 25 of smallpox and 825 of typhoid fever. During the same period there were in Ohio 12 cases of meningitis, 153 of poliomyelitis, 38 of smallpox and 655 of typhoid. In South Carolina there were 143 cases of malaria, 33 of pellagra, and 134 of typhoid. There were 49 cases of poliomyelitis and 28 of smallpox in Minnesota and 167 cases of typhoid in Michigan.

POST-GRADUATE MEDICAL TEACHING IN PHILADELPHIA.—It is announced in the issue of *Science* for November 5 that over one hundred physicians of Philadelphia have joined in the formation of a coöperative association for post-graduate teaching of medicine in that city. The president of this organization is Dr. David Reisman, and the secretary Dr. George P. Müller. It is planned to establish a central bureau with a permanent secretary where the clinical and didactic opportunities of the city will be tabulated and correlated for the benefit of visiting students and graduates.

CONFERENCE OF TUBERCULOSIS WORKERS OF NORTH ATLANTIC STATES.—The opening session of the second annual conference of tuberculosis workers of the North Atlantic States held at Albany, N. Y., was given to the discussion of the subject "Tuberculosis and Industry." Addresses were made by members of the New York City Health Department, the American Association for Labor Legislation and statisticians of various large life insurance companies.

THE HOSPITAL SHIP "ANDROSCOGGIN."—In several issues of the JOURNAL last winter we commented editorially on the service of the revenue cutter *Androscoggin*, which was equipped as a hospital ship for fishermen and cruised for several months about the fishing banks and off the coast of Newfoundland and Nova Scotia. The value and importance of the service done by this ship in the prompt care and relief of sickness and injuries among fishermen has fortunately led to the intention of equipping her again for similar service during the coming winter. The hospital facilities aboard the *Androscoggin* have been enlarged and otherwise improved and on November 6 she sailed again from Gloucester for her initial cruise of the season. She will be at sea except when calling at Halifax for coal and water or to land patients for care in hospitals ashore. The ship is in command of Captain Van Boskerck.

DURATION OF IMMUNITY FROM SMALL-POX BY VACCINATION.—In a recent issue of the *Weekly Bulletin* of the Health Department of New York City, Dr. W. H. Park reports the results of investigations regarding the length of time of small-pox immunity conferred by a successful vaccination. He states that there are two means of judging this: the first is thorough observation of those who, having had a successful vaccination, are later exposed to small-pox, and the second, the duration of immunity to vaccination with vaccine virus. From statistics carefully compiled by the United States Public Health Service for a period of three years the following figures are obtained. Of 18,953 cases of smallpox, 798 had been vaccinated within

seven years preceding attack, 1,632 were vaccinated more than seven years preceding attack and 16,523 were never successfully vaccinated. It is calculated that 99.9% of persons who have never been vaccinated will "take" if vaccine is of high potency. As to the duration of immunity judged by revaccination, Lescohier finds that after one year 28% of persons become susceptible; after five years 50% become susceptible and 85% after ten years. Occasionally persons are met who can be successfully vaccinated at the end of six months. Dr. Park, therefore, draws his deductions that it is wise for anyone exposed to small-pox to be vaccinated, if a successful vaccination has not been obtained within nine months, and that the general population should be vaccinated about every five years when small-pox is at all prevalent. Even when the disease is absent all persons should be vaccinated in infancy and again in childhood so as to keep the population moderately immune and so prevent a sudden development of an epidemic.

EUROPEAN WAR NOTES.

EQUIPMENT OF FRENCH HOSPITAL TRAINS.—Report from Paris on November 1 states that a number of Americans, resident in that city, have interested themselves in the reorganization of the French hospital service, particularly the re-equipment of hospital trains for transporting the wounded from the front.

"The first step in improving the service was the addition to every train of a car equipped with an operating table and surgical supplies, so that wounded soldiers might be treated during the journey from the front to the permanent hospital, perhaps hundreds of miles away.

"One of the first cars so attached to a train was a freight car rebuilt at the expense of Mrs. Washington Lopp. She contributed the money to Commandant F. Loiseleur, in charge of the temporary hospitals at each of the railway stations of Paris, and of the construction yards of the state railway, and then requested other of her friends to provide money for the same purpose.

"To date a number of Americans have helped, one car having been fitted up by money sent from Hawaii, through Dr. James R. Judd and friends. Among other Americans thus contributing are Walter B. Hardy of Chicago and Mrs. Emory R. Johnson of Philadelphia. As a result of the rebuilding of these first freight cars for this purpose, to date not less than 50 cars have been remodeled with money contributed by individuals of cities of France. So great has been the use of these cars to the military surgeons that the War Department has authorized the placing of one with each of the 250 hospital trains now in service in France.

"Stimulated by the example of these Americans, Madame Marguerite Carre, the wife of the director of the Comédie Française, has just equipped an entire train of 14 cars with money she collected. This magnificent train, known as the Carre train No. 15, is believed here to be the model hospital train of the world. The train has just made its first trip to the front, in charge of Dr. T. Tizon, who has been in service more than a year. He has stated that 300 wounded carried in the train were transported under admirable conditions, and without the loss of a single life.

"Service as physicians and nurses in these trains promises to become as popular among helping foreigners as that in the hospitals and ambulance corps.

"The friends of France among the allied and neutral nations now serving in the hospitals and ambulance corps number no less than 7000, of whom 2000 are Americans."

INFANT MORTALITY IN IRELAND.—The losses of life occasioned by the war seem already to have aroused the apprehension of publicists in the European countries on account of the inevitable decline in population which will ensue. In Ireland this apprehension seems to have given impetus to the attempt to reduce infant mortality in the hope of thus combating the depopulating effect of the war. This action is illustrated by the following extracts from the circular issued by the Women's Health Association of Ireland and widely distributed in that country.

"The ravages of war are rapidly thinning out the best young manhood of our nation. Tens of thousands in the prime of their days have gone forth to return no more. How are their places to be filled in the rising generation?

"It can be done by reducing the high rate of infant mortality in the towns of Ireland, and by preventing preventable illness amongst the growing children.

"But the war has already rendered this task doubly difficult. This is how it stands:

"Infant mortality, always far too high even in normal times, has increased since the war started. In Dublin it rose during the first quarter of the present year from an average of 145 to 181 per thousand. And this is not to be wondered at, for every bullet that kills a soldier wrecks two lives—his own and the life of the woman who loves him. And if that woman is the mother of his infant child its life too may be claimed by the same shot.

"Thus war, which claims the life of the soldier, by the privations, anxieties and sorrows which it brings upon his wife, often unfits her for the function of healthy motherhood, and the infant or unborn child is another victim in the national sacrifice.

"The Rt. Hon. Herbert Samuel, late president of the local government board, in a recent speech, estimated that in many districts a third of our possible population never survive their first year. To remedy this to some extent the government has decided to provide a grant for paying half the expense of duly approved organizations, such

as schools for mothers, infant welfare centres, infant clinics, etc. This is all aimed at training the mothers to save their little ones from death or a maimed life, to which ignorance on the mother's part so often dooms them.

"This is all the more necessary in Ireland where there is no medical school inspection, and no school medical officers to watch over the health of the children, and where the school buildings are often overcrowded and insanitary.

"It is, therefore, all the more necessary to watch over the health of the children in their infant years.

"In Dublin the average death-rate among infants under 1 year per every 1000 births for the last five years stands at 146, in Belfast 144, in Waterford 140, in Cork 121, and in 27 other towns in Ireland 132."

AMERICAN WOMEN'S WAR HOSPITAL.—It is announced that the makeup of the completed staff of the American Women's War Hospital, Oldway House, Paignton, South Devon, England, is as follows: Dr. D. Pearce Penhallow, chief surgeon; Dr. Fred C. Coller, assistant chief surgeon; Dr. James E. Daniel, Dr. Harold M. Frost, Dr. Russell P. Borden and Dr. Harold M. Goodwin, assistant surgeons; Dr. Arthur Casselman of the University of Pennsylvania, internist and bacteriologist.

INJURY TO KING GEORGE.—An item in a recent issue of the *Lancet* makes the following official statement about the recent accident to King George by a fall from his horse in France, which is evidently more serious than reported in the papers, since the King has been confined to bed for some days. The *Lancet* states. "There is no evidence whatever of any visceral lesion, or any fracture. Although the King is still confined to his bed, this is necessitated solely by a muscular stiffness."

THIRD HARVARD SURGICAL UNIT.—The third Harvard surgical unit, whose organization has been noted in recent issues of the JOURNAL, sailed from New York aboard the steamship *Noordam* on Wednesday of this week, Nov. 17. Its ultimate destination is not announced, but it will be landed first at Falmouth, England. Among the surgeons who have volunteered for service with this unit is Dr. Sir Wilfred T. Grenfell of Labrador. The unit will be in charge of Dr. David Cheever of Boston. The personnel of the unit consists of thirty-six nurses and the following physicians in addition to Dr. Cheever and Dr. Grenfell: Dr. John L. Bremer of Boston, Dr. Bronson Crothers of Cambridge, Mass., Dr. Abram L. Van Meter, Dr. John F. Dillon, Dr. H. R. McNair, Dr. Frank A. Smith, Dr. R. S. Catheron, Dr. A. A. Halliday, Dr. E. B. Towne, Dr. W. D. Jack, Dr. George Benet, Dr. E. W. Fiske, Dr. F. B. Abbott, Dr. L. R. Hill, Dr. W. O. Wilder, Dr. A. Gale Straw, Dr. E. O. Thomas, Dr. John C. Phillips, Dr. George Osgood, Dr George M. Watson of Manchester, N. H., and Dr. Macy Brooks of Philadelphia.

CHOLERA IN GERMANY.—During the week ended October 2 there was in Germany only one fatal case of Asiatic cholera which occurred at Kiel. There has been no genuine epidemic of this disease in Germany since the outbreak of the war and it appears that for the present season the sporadic incidence of the disease is probably at an end.

WAR RELIEF FUNDS.—On Nov. 13 the totals of the principal New England relief funds for the European War reached the following amounts:

Belgian Fund	$277,704.36
American Ambulance Fund	63,292.00
Serbian Fund	37,280.05
Allied Fund	25,120.37
French Fund	23,153.56
St. George's Fund	12,085.54
LaFayette Fund	11,749.99
Armenian Fund	8,981.45
Surgical Dressing Fund	7,889.00

NEW ENGLAND NOTES.

SYPHILIS AS A PUBLIC HEALTH PROBLEM.—In the September number of the Public Health Bulletin issued by the State Department of Health, Dr. A. J. McLaughlin takes up the matter of syphilis as a public health problem. He states that he regards it as one of the most pressing public health problems of the time. He gives as reasons why it has not been treated as such the following:

1. There are no reliable statistics of the prevalence of the disease.

2. It is looked upon as a social disgrace to contract syphilis, and desire for concealment often causes the patient to neglect proper treatment or to fall into the hands of quacks and charlatans.

3. Among the poor and those in moderate circumstances the cost of salvarsan is often prohibitive.

Therefore, he believes that the State Department of Health should work toward the control of the disease in the following manner.

1. The disease should be reportable in a modified way.

2. Wassermann tests should be made free of charge by the State upon requests of physicians.

3. Salvarsan should be furnished free by the State to physicians for cases reported by number which have been found positive in the State Wassermann Laboratory.

The request of sanitarians to have cases of syphilis reported is not prompted by a desire to exercise quarantine powers over the individual, but rather to secure statistical information which will aid in combating the disease. It is, therefore, unnecessary to give the name and address,

but the reporting physician can report by number, giving all other interesting data.

This number can then be replaced by a serial number given by the State Department of Health and the physician then requested to make further reports or references under the serial number.

The Wassermann Laboratory of the State Department of Health began its work on June 1, 1915, and is now examining over 1000 specimens each month.

Prevalence of Diphtheria in Massachusetts.—During the past month of October there has been in Massachusetts, a slightly increased prevalence of diphtheria over that of the corresponding month last year. It appears that the disease generally has its maximum incidence during this month. In October, 1914, there were 1,148 cases of diphtheria, with 77 deaths and in October, 1915, there were 1,175 cases with 44 deaths. In September, 1915, there were in Massachusetts only 598 cases of the disease. During this month 638 examinations of cultures were made at the State Laboratory and in October over 2,300 cultures were examined. The cities and towns in which diphtheria has been most prevalent during the past month are Agawam, Amherst, Attleboro, Brockton, Fitchburg, Haverhill, Hudson, Lawrence, Leominster, Lowell, Lynn, Malden, New Bedford, Revere, Rockport, Saugus, Shirley and Waltham.

Mental Hygiene Conference and Exhibit.—The mental hygiene conference and exhibit which was announced in last week's issue of the Journal, is at present in progress in this city under the auspices of the Massachusetts Society for Mental Hygiene. The exhibit in Kingsley Hall, Ford Building, is one of the most elaborate ever shown on this subject. In a series of sixty charts is represented the ratio of mental disease in Massachusetts and in the United States, the causes of mental disease and the means of its prevention. A special group of charts demonstrates the social service and outpatient work done for psychopathic and nervous patients in the various state hospitals. There is an industrial display from fifteen of these hospitals exhibiting weaving, rug making, brass and clay work and other forms of occupation employed in the treatment of mental and nervous cases.

Detention of a Leper in Boston.—A case of leprosy has been discovered in Boston and reported to the Department of Health. The patient, a Greek, was employed in a small restaurant in the West End and had been going regularly to one of the public hospitals for treatment. When the nature of his disease was definitely determined, the health authorities were notified and the man sent to the Southampton Street Detention Hospital, later to be sent to the leper colony on Penikese Island. He came to this country from Greece three and a half years ago and has been in this city ever since. The other employees of the restaurant and the occupants of the house where the patient lived are under observation by the health department.

Resignation of Director of Milk and Baby Hygiene Association.—George R. Bedinger, director of the Milk and Baby Hygiene Association, has resigned from that position to become executive head of the Children's Aid Society of Detroit.

Appointment of School Physician.—It is announced that Dr. Mary T. V. Moore, physician in charge of the baby clinic at the Massachusetts Homeopathic Hospital, has been certified by the Civil Service Commission and received her appointment by the Boston School Board as physician under its new organization.

Obituary.

GRACE WOLCOTT, M.D.

Dr. Grace Wolcott of Boston died suddenly on Nov. 9, at Heath, Massachusetts. Dr. Wolcott was the daughter of the late John Wesley and Henrietta Louisa Tracy (Eustis) Wolcott, and was born in Roxbury Feb. 15, 1858. She studied medicine at the Women's Medical College of Pennsylvania, from which she was graduated in 1884, later taking a post-graduate course at the Philadelphia Polyclinic and subsequently going to Vienna and Paris for more extended study. Dr. Wolcott had been a practising physician in Boston since 1884. She was a member of the American Medical Association, the Massachusetts Medical Society and the Boston Medical Library.

Dr. Wolcott's greatest contribution to women's work in medicine was her share in establishing Trinity Dispensary and the Vincent Memorial Hospital. Trinity Dispensary was the first dispensary to be established to be open evenings, and this offered an opportunity for working women to get medical advice without losing time and wages. Later to give further care to the same people, she helped to establish the Vincent Memorial Hospital. To both of these institutions she gave most devoted and wise service for about twenty years. For all who assisted or followed her, her standards of work were most stimulating.

In 1912, when Dr. Wolcott retired from active medical work at the hospital, she was made consulting physician and a member of the board of managers. At her camp in Heath, where she long had had patients, she was one of the first to try the system of providing occupation for nervous patients, a plan which is now in general use. She was a member of Trinity Church and was deeply interested in all its activities.

Dr. Wolcott's profession and her religion dominated her interests and her relationships. She was pre-eminently a physician alike of bodies and of souls. Radiantly alive herself, she rejoiced in all forms of life; and her keenest pleasure lay in spending herself that she might give fostering care to all living things from the blade of grass through all nature up to humanity. Strength mated with tenderness, faith and joy, boundless courage, unstinting devotion, marked her glowing personality, filling her with the life abundant, and so making her communicative of it to all who came under her care and influence. She had not been well for some time and had decided to spend the winter at Heath. There her earthly life came to an end; and with a swiftness and directness characteristic of all she did, she passed into eternal peace.

Miscellany.

INCREASE IN COST OF DRUGS.

THE continued increase in cost of drugs has progressed steadily since the latest note on the subject in the JOURNAL of November 4. Report from New York on Nov. 5 states that the cost of quinine, potash preparations and all narcotic drugs has advanced even more rapidly than that of other pharmaceutical and chemical products.

"Quinine scored its most sensational advance on the present upward movement this week when prices rose to $2.50 and $2.75 an ounce from a basis of $2.15 an ounce. The advance from the normal basis of 26 cents an ounce will probably go further as cable advices received from London state that the British Government has just placed quinine sulphate on its list of prohibited exports in order to prevent depletion of its own supplies. This vital development in the quinine situation leaves the United States dependent upon its own domestic production, which amounts to only 1,500,000 ounces of quinine annually, or only one-half as much foreign sulphate as is imported into the United States annually during normal times, that amount being 3,000,000 ounces.

"The heavy consumption of quinine for the war has, of course, been the principal factor in the rise in the article. All of the European belligerents have been in the domestic markets for amounts beyond credence. It is said on reliable authority that more than 500,000 ounces of domestic and foreign quinine sulphate have been exported since the commencement of the European War, but verification of these figures is impossible, as exporters have in many instances refused to declare the identity of the commodity offered for export or have resorted to the subterfuge of concealing the name of the drug under a proprietary name.

"The conditions which brought about an advance in quinine prices to $5 and $6.50 an ounce during the Civil War bid fair to be duplicated here within the next few weeks. The American salts makers are utilizing all their stocks and current output in filling outstanding contracts and have been forced to decline to book any new business. The local market continues bare of Java and Amsterdam salts at any figure, and German salts have long been unobtainable in this market.

"In order to gain an idea of the present position of the article it is well to remember that cinchona bark, the basic material, has advanced from 15 to 25 cents a pound. It is understood that the allotments of bark to domestic manufacturers by Java bark growers have been very small. Import figures for the first eight months of the current year to the end of August indicate a falling off to only 2,736,690 pounds of bark as against 3,230,985 pounds in the corresponding ten months in 1914, and 3,944,509 for the calendar year ended December, 1914. The material diminution in the shipments of cinchona bark from Java, together with the cutting off of the output of the large German factories which formerly produced 7,000,000 ounces of quinine annually, may again lead to the usage of the native South American Peruvian bark which is found in a belt 100 miles wide by 2000 miles long, extending through Venezuela, New Granada, Ecquador, Peru, and Bolivia.

"All the various manufacturers of mercurial preparations have been forced to advance prices eight cents a pound on the 'hard' and three cents a pound on the 'soft' in consequence of the high cost of quicksilver. This is the third advance announced in mercury preparations since June 28 last and prices in fifty-pound lots in one delivery for hard mercurials are now given by the manufacturers; as calomel, $1.51 a pound; corrosive sublimate, powdered, $1.38; crystals, $1.43; mercury bisulphate, $1.29; red precipitate, ordinary and powdered, $1.64 and $1.74, respectively; white precipitates, ordinary and powdered, $1.74 and $1.79 respectively. The soft mercurials are now quoted in fifty-pound lots in one delivery at: blue mass, 75 to 77 cents; mercury and chalk, 77 cents; mercurial ointment (one-half mercury), 93 cents a pound; citrine ointment, 75 cents a pound.

"An unprecedented upheaval of drug and chemical market conditions has taken place in nearly all other products and has carried prices with few exceptions to the highest point in history. Practically every drug and chemical product known to modern science has at least doubled in price since the commencement of hostilities in Europe, and some products have risen as much as 3000%. In cases where the import movement of drugs and chemicals from Europe, Russia in Asia, Turkey, Egypt, Japan or China has not been entirely suspended, the amounts of such commodities being released by the factors

at the seats of production are so small as to be considered of negligible importance.

"American manufacturers of finished and semi-finished drug products have been forced to advance quotations on every conceivable material in order to protect themselves against further advances in costs of crude materials caused by scarcity and high prices of labor abroad. This has brought about an unheaval in conditions such as has never before been witnessed, and in many instances makers have entirely withdrawn their offerings in order to prevent supplies from reaching the hands of speculators. The latter interests have been and are still reaping a harvest of dollars, in their capacity as middlemen for purchasing agents of the Allied Governments.

"A sensational advance has taken place in all narcotic drugs, following the realization on the part of all domestic handlers that the unabated bombardment of Constantinople by the Allied fleet, as well as the cutting of the Nish-Salonica railway by the Teuton Allies renders present opium stocks impossible of replacement. Druggist's quality gum opium has been advanced 25% within the past few days and now commands $10.25 per pound, while powdered opium is selling at $11.25 and $11.50 and granular at $11.50 and $11.75 per pound. While import statistics would indicate little concern over the position of opium, imports for eight months ended in August last having totalled 298,270 pounds of the value of $1,456,816 against 258,704 pounds of the value of $1,141,132 in the same time in 1914, there has been a steady diminution in the supplies in United States bonded warehouses, as well as in the hands of dealers, owing to the export demand, both for opium derivatives and for the gum itself. The stock of opium containing 9% or over of morphia in United States bonded warehouses on July 1, last, stood at 92,997 pounds of the value of $394,088. The stocks of opium in bonded warehouses on Sept. 1 had declined to 67,687 pounds of the value of $293,658, a decline of $100,430 in value. A corresponding shrinkage was noted in the stocks in dealers' hands.

"In view of the greatly increased cost of opium, domestic manufacturers of all of the derivatives therefrom have been forced arbitrarily to advance their prices in order that they might bear their approximate proportion of cost of the newly established value of sulphate of morphine and codeine. Thus quotations for morphine sulphate have been advanced 50 cents an ounce to a basis of $5.50 an ounce for 5-ounce cans, $5.55 an ounce for 1-ounce cans, $5.75 an ounce for 1/8-ounce vials in 2½-ounce boxes, and $5.80 an ounce for 1/8-ounce vials in 1-ounce boxes; while morphine acetate and morphine alkaloid in 1/8-ounce vials have been advanced to a basis of $7.15 an ounce in 25-ounce lots. Codeine sulphate also has advanced to the extent of 50 cents an ounce, and $6.95 is now asked for sulphate and hydrobromide of codeine in 1/8-ounce vials. The new schedule on codeine alkaloid and other salts is much higher than that on the sulphate, sellers naming $8.60 for alkaloid, $7.80 for acetate, chloride and nitrate, and $6.55 an ounce for phosphate and salicylate. Other morphine derivatives in 10-ounce lots are advanced to $6.70 for diacetylmorphine hydrochloride, $7.35 for diacetylmorphine alkaloid, $7.90 for ethylmorphine hydrochloride, and $16.80 for apomorphine hydrochloride. No contracts or orders calling for forward deliveries are today being entered by manufacturers at these figures, but the makers are busy accepting orders for prompt deliveries at these quotations."

Correspondence.

A STUDENT'S POINT OF VIEW.

BOSTON, November 5, 1915.

Mr. Editor: It has been my observation in the various hospitals in which I have worked as a student, that many medical men appear to look on surgeons as knaves who will operate on anyone on whom they can lay their hands, and that they, therefore, hesitate greatly in sending patients to them. Some surgeons, on the other hand, seem to regard medical men as fools, and, feeling that they are themselves competent to treat any medical case, will not transfer cases for treatment to their colleagues. The result is that there are patients in our hospitals who suffer because of the lack of an all-round view on the part of men having their care. One cannot help feeling that, had the physicians and surgeons taken hospital appointments which included some medicine and some surgery, each would have been more lenient to the other.

Furthermore, despite the fact that "the day of the general practitioner is over," a canvass of three recently graduated classes of the Harvard Medical School shows the following figures:

Total number heard from			86
Hospital Appointments.		*Additional Hosp. Appointments.*	
Medical	27	Children's obstetrical and contagious	1
		Obstetrical	3
		Gynecological and obstetrical	1
		Children's	1
Surgical	26	Mixed	1
Mixed	27	Surgical	1
		Children's	1
		Children's and obstetrical	1
Path.	1		
None	5		

Doing a general practice	46
"Work largely surgical"	1
"Institutional work including both medicine and surgery"	1
"Medicine and surgery"	1
"Some minor conditions any M.D. can treat (not really surgical) come into my practice"	1
	50
Doing medicine now (One on a "mixed" training)	18
Doing surgery now (One on a "mixed" training)	8

Doing medicine and obstetrics	1
Doing surgery and obstetrics	2
Doing eye, ear, nose, and throat	1
Doing laboratory work	5
Not practicing	1
	36

Of the 50 men who are, to all intents and purposes, doing a general practice,

26 took mixed appointments.	*Additional Appointments.*	
15 took surgical appointments.	Obstetrical	1
	Mixed	1
7 took medical appointments.	Children's, obstet., plus contagious	1
1 took surgical plus medical.		
1 took no appointment.		

From these results it may be seen that approximately 58% of the *recent* graduates are doing a general practice, and that about 40% of these are doing so on an inadequate training. The reason for this unfortunate state of affairs seems to be that most men want to take their hospital training in the teaching centres, where it is to be presumed that the best teachers are to be found, and that this particular centre (into which most Harvard graduates naturally drift) has abolished the mixed service from its larger hospitals. Few men care to begin at the foot of a service after they have already reached the position of senior on a parallel service, or to repeat the routine laboratory work. And whatever the condition of affairs in the future may be, at present the public suffers.

It is not my plea that the training now given in these large hospitals in either medicine or surgery be cut down, but that in addition to the time now given to either, a training in the other branch also be offered. Thus a man taking a twenty-two-month medical appointment would have the opportunity of doing eleven months of surgery, and *vice versa*.

P. R. W.

UNITED STATES CIVIL-SERVICE EXAMINATION

ASSISTANT IN METABOLISM INVESTIGATIONS (MALE), $1500.

December 8, 1915.

The United States Civil Service Commission announces an open competitive examination for assistant in metabolism investigations, for men only, on December 8, 1915. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the United States Public Health Service for duty in the field at a salary of $1500 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will be to make complete food analyses, including calorimetric determinations. Appointees will also be required to use the respiration apparatus for the determination of the energy metabolism.

Graduation from a four-years' course at a college, university, or medical school of recognized standing and at least six months' practical experience in work with the respiration apparatus and the calorimeter are prerequisites for consideration for this position.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Tintypes or proofs will not be accepted.

This examination is open to all men who are citizens of the United States and who meet the requirements. Persons who meet the requirements and desire this examination should at once apply for Form 1312, stating the title of the examination for which the form is desired, to the United States Civil Service Commission, Washington, D. C. Applications should be properly executed, excluding the medical and county officer's certificates, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. The exact title of the examination as given at the head of this announcement should be stated in the application form.

AUTHORS' EVENING.

The Fourth "Author's Evening" of Ten Papers. "A Second Contribution to the Neurology of Childhood," by Walter B. Swift, M.D., and assistants: C. A. Osborne, M.D., Ph.D., second assistant; Miss Jennie Hedrick, voluntary assistant. AT THE VOICE CLINIC, PSYCHOPATHIC HOSPITAL, 74 FENWOOD ROAD, NOVEMBER 19, 1915, AT 8 P.M. 1. The Signs and Symptoms of Stuttering. 2. The Physical and Mental Examination of Stutterers. 3. The Thymus as the Seat of Stuttering—Browning. 4. Relation of Stammering to Right and Left-handedness. 5. Medical Aspects of Stuttering from the Teacher's Standpoint. 6. Incongruities in the Freudian Concept of Stuttering. 7. Five-Minute Summary of Spirometer Findings in Stutterers. 8. Further Psychological Steps in the Recovery of the Same Stutterer. 9. Psycho-physiological Analysis of Stuttering. 10. Locating the Speech Center by Hand Motions in Stutterers. First Note.

Physicians and medical students are invited.

Kindly drop a postal, if you expect to attend, to 110 Bay State Road, Boston, Mass.

APPOINTMENTS.

UNITED STATES PUBLIC HEALTH SERVICE.—*Dr. W. McCoy*, recently in charge of the investigations at the leper hospital in Molokai, Hawaii, has been appointed director of the Hygienic Laboratory of the United States Public Health Service to succeed *Dr. John F. Anderson*, who has resigned.

UNIVERSITY OF CINCINNATI.—*Dr. Robert S. Morris* has been appointed Frederick Forchheimer professor of medicine.

UNIVERSITY OF CONSTANTINOPLE.—*Dr. Boris Zarnik* of Würzburg, Germany, has been appointed professor of zoölogy.

UNIVERSITY OF HONG KONG.—*Dr. H. G. Earle* has been appointed professor of physiology.

UNIVERSITY OF NEVADA.—*Dr. Robert H. Mullin*, formerly director of laboratories of the Minnesota State Board of Health and assistant professor of pathology and bacteriology at the University of Minnesota, has been appointed to take charge of the hygienic laboratories of the University of Nevada at Reno.

UNIVERSITY OF UTRECHT.—*Dr. Hermann Jordan* of Tübingen, Germany, has been appointed associate professor of comparative physiology.

RECENT DEATH.

DR. GRACE WOLCOTT, of Boston, died at Heath, Mass., November 9, aged 57 years. She was a councilor of The Massachusetts Medical Society from 1901 to 1913.